AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

FIRST RESPONDER INTEROPERABILITY: CAN YOU HEAR ME NOW?

JOINT HEARINGS

BEFORE THE

SUBCOMMITTEE ON NATIONAL SECURITY, EMERGING THREATS, AND INTERNATIONAL RELATIONS

AND THE

SUBCOMMITTEE ON TECHNOLOGY, INFORMATION POLICY, INTERGOVERNMENTAL RELATIONS AND THE CENSUS

OF THE

COMMITTEE ON GOVERNMENT REFORM

HOUSE OF REPRESENTATIVES

ONE HUNDRED EIGHTH CONGRESS

FIRST SESSION

NOVEMBER 6, 2003

Serial No. 108–139

Printed for the use of the Committee on Government Reform

Available via the World Wide Web: http://www.gpo.gov/congress/house
http://www.house.gov/reform

U.S. GOVERNMENT PRINTING OFFICE

93–427 PDF WASHINGTON : 2004

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2250 Mail: Stop SSOP, Washington, DC 20402–0001

COMMITTEE ON GOVERNMENT REFORM

TOM DAVIS, Virginia, *Chairman*

DAN BURTON, Indiana
CHRISTOPHER SHAYS, Connecticut
ILEANA ROS-LEHTINEN, Florida
JOHN M. MCHUGH, New York
JOHN L. MICA, Florida
MARK E. SOUDER, Indiana
STEVEN C. LATOURETTE, Ohio
DOUG OSE, California
RON LEWIS, Kentucky
JO ANN DAVIS, Virginia
TODD RUSSELL PLATTS, Pennsylvania
CHRIS CANNON, Utah
ADAM H. PUTNAM, Florida
EDWARD L. SCHROCK, Virginia
JOHN J. DUNCAN, JR., Tennessee
JOHN SULLIVAN, Oklahoma
NATHAN DEAL, Georgia
CANDICE S. MILLER, Michigan
TIM MURPHY, Pennsylvania
MICHAEL R. TURNER, Ohio
JOHN R. CARTER, Texas
WILLIAM J. JANKLOW, South Dakota
MARSHA BLACKBURN, Tennessee

HENRY A. WAXMAN, California
TOM LANTOS, California
MAJOR R. OWENS, New York
EDOLPHUS TOWNS, New York
PAUL E. KANJORSKI, Pennsylvania
CAROLYN B. MALONEY, New York
ELIJAH E. CUMMINGS, Maryland
DENNIS J. KUCINICH, Ohio
DANNY K. DAVIS, Illinois
JOHN F. TIERNEY, Massachusetts
WM. LACY CLAY, Missouri
DIANE E. WATSON, California
STEPHEN F. LYNCH, Massachusetts
CHRIS VAN HOLLEN, Maryland
LINDA T. SANCHEZ, California
C.A. "DUTCH" RUPPERSBERGER, Maryland
ELEANOR HOLMES NORTON, District of Columbia
JIM COOPER, Tennessee
CHRIS BELL, Texas

BERNARD SANDERS, Vermont (Independent)

PETER SIRH, *Staff Director*
MELISSA WOJCIAK, *Deputy Staff Director*
ROB BORDEN, *Parliamentarian*
GRACE WASHBOURNE, *Professional Staff Member*
TERESA AUSTIN, *Chief Clerk*
PHILIP M. SCHILIRO, *Minority Staff Director*

SUBCOMMITTEE ON NATIONAL SECURITY, EMERGING THREATS AND INTERNATIONAL RELATIONS

CHRISTOPHER SHAYS, Connecticut, *Chairman*

MICHAEL R. TURNER, Ohio
DAN BURTON, Indiana
STEVEN C. LATOURETTE, Ohio
RON LEWIS, Kentucky
TODD RUSSELL PLATTS, Pennsylvania
ADAM H. PUTNAM, Florida
EDWARD L. SCHROCK, Virginia
JOHN J. DUNCAN, JR., Tennessee
TIM MURPHY, Pennsylvania
WILLIAM J. JANKLOW, South Dakota

DENNIS J. KUCINICH, Ohio
TOM LANTOS, California
BERNARD SANDERS, Vermont
STEPHEN F. LYNCH, Massachusetts
CAROLYN B. MALONEY, New York
LINDA T. SANCHEZ, California
C.A. "DUTCH" RUPPERSBERGER, Maryland
CHRIS BELL, Texas
JOHN F. TIERNEY, Massachusetts

EX OFFICIO

TOM DAVIS, Virginia

HENRY A. WAXMAN, California

LAWRENCE J. HALLORAN, *Staff Director and Counsel*
ROBERT A. BRIGGS, *Clerk*
DAVID MCMILLEN, *Minority Professional Staff Member*

SUBCOMMITTEE ON TECHNOLOGY, INFORMATION POLICY, INTERGOVERNMENTAL RELATIONS AND THE CENSUS

ADAM H. PUTNAM, Florida, *Chairman*

CANDICE S. MILLER, Michigan
DOUG OSE, California
TIM MURPHY, Pennsylvania
MICHAEL R. TURNER, Ohio

WM. LACY CLAY, Missouri
DIANE E. WATSON, California
STEPHEN F. LYNCH, Massachusetts

EX OFFICIO

TOM DAVIS, Virginia

HENRY A. WAXMAN, California

BOB DIX, *Staff Director*
SCOTT KLEIN, *Professional Staff Member*
URSULA WOJCIECHOWSKI, *Clerk*
DAVID MCMILLEN, *Minority Professional Staff Member*

CONTENTS

Page

Hearing held on:
- November 6, 2003, panel one 1
- November 6, 2003, panel two 205

Statement of:
- Evans, Karen S., Administrator of E-Government and Information Technology, U.S. Office of Management and Budget; Dr. David Boyd, Program Manager, SAFECOM, Wireless Public Safety Interoperable Communications Program, U.S. Department of Homeland Security; John Morgan, Assistant Director, Science and Technology, National Institute of Justice, Advanced Generation Interoperability Law Enforcement [AGILE]; John Muleta, Chief, Wireless Bureau, Federal Communications Commission; and Edmond Thomas, Chief, Office of Engineering and Technology, Federal Communications Commission 213
- Jenkins, William O., Jr., Director, Homeland Security and Justice Issues, U.S. General Accounting Office; Marilyn Ward, chairman, National Public Safety Telecommunications Council [NPSTC], manager, Public Safety Communications Division, Orange County, FL; Aldona Valicenti, National Association of State Chief Information Officers, NASCIO member to PSWN/SAFECOM, chief information officer, State of Kentucky; Marilyn Praisner, councilwoman, Montgomery County, MD, Chair, Telecommunity, Chair, Technology Committee, National Association of Counties, PSWN Executive Board, CapWIN Executive Board; and George Ake, program director, Capital Wireless Integrated Network [CapWIN] 32

Letters, statements, etc., submitted for the record by:
- Ake, George, program director, Capital Wireless Integrated Network [CapWIN], prepared statement of 92
- Boyd, Dr. David, Program Manager, SAFECOM, Wireless Public Safety Interoperable Communications Program, U.S. Department of Homeland Security, prepared statement of 222
- Clay, Hon. Wm. Lacy, a Representative in Congress from the State of Missouri, prepared statements of 25, 279
- Evans, Karen S., Administrator of E-Government and Information Technology, U.S. Office of Management and Budget, prepared statement of 216
- Harman, Hon. Jane, a Representative in Congress from the State of California, prepared statements of 11, 296
- Jenkins, William O., Jr., Director, Homeland Security and Justice Issues, U.S. General Accounting Office, prepared statement of 35
- Maloney, Hon. Carolyn B., a Representative in Congress from the State of New York, prepared statements of 30, 295
- Morgan, John, Assistant Director, Science and Technology, National Institute of Justice, Advanced Generation Interoperability Law Enforcement [AGILE], prepared statement of 234
- Muleta, John, Chief, Wireless Bureau, Federal Communications Commission, prepared statement of 249
- Praisner, Marilyn, councilwoman, Montgomery County, MD, Chair, Telecommunity, Chair, Technology Committee, National Association of Counties, PSWN Executive Board, CapWIN Executive Board, prepared statement of 73
- Putnam, Hon. Adam H., a Representative in Congress from the State of Florida:
  - Prepared statements of 5, 209
  - Prepared statement of Vincent Stile 113

Page

Letters, statements, etc., submitted for the record by—Continued
Shays, Hon. Christopher, a Representative in Congress from the State of Connecticut, prepared statements of 22, 206
Valicenti, Aldona, National Association of State Chief Information Officers, NASCIO member to PSWN/SAFECOM, chief information officer, State of Kentucky, prepared statement of 64
Ward, Marilyn, chairman, National Public Safety Telecommunications Council [NPSTC], manager, Public Safety Communications Division, Orange County, FL, prepared statement of 56

FIRST RESPONDER INTEROPERABILITY: CAN YOU HEAR ME NOW?

THURSDAY, NOVEMBER 6, 2003

HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON NATIONAL SECURITY, EMERGING THREATS AND INTERNATIONAL RELATIONS, JOINT WITH THE SUBCOMMITTEE ON TECHNOLOGY, INFORMATION POLICY, INTERGOVERNMENTAL RELATIONS AND THE CENSUS, COMMITTEE ON GOVERNMENT REFORM,

Washington, DC.

The subcommittees met, pursuant to notice, at 10:05 a.m., in room 2154, Rayburn House Office Building, Hon. Adam H. Putnam (chairman of the Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census) presiding.

Present: Representatives Putnam, Duncan, Janklow, Murphy, Schrock, Shays, Clay, Maloney, Ruppersberger, Sanchez, and Tierney.

Also present: Representatives Harman and Weldon.

Staff present: Lawrence Halloran, staff director and counsel; and Robert A. Briggs, clerk; Subcommittee on National Security, Emerging Threats and International Relations. Bob Dix, staff director; and Ursula Wojciechowski, clerk; Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census. Grace Washbourne, professional staff member; John Hambel, counsel; David McMillen, minority professional staff member; Jean Gosa, minority assistant clerk; and Casey Welch and Jamie Harper, minority legislative assistants, Committee on Government Reform.

Mr. PUTNAM. This joint hearing of the Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census will come to order. And we are tickled to death to be in a joint hearing today with the Subcommittee on National Security, Emerging Threats and International Relations. This hearing came together at Mr. Shays' invitation. He has been a leader on this issue. I was honored to serve as his vice chair in my freshman term for 2 years with his National Security Subcommittee and delighted that he invited the Subcommittee on Technology to join him in this very important topic.

Good morning and welcome to today's hearing assessing the progress being made to ensure interoperability of our Nation's public safety communications systems. We have divided today's activities into two parts for reasons that we will get into in the second part. Our first hearing will focus on our local and State officials who have the responsibility of managing public safety communica-

tions. Our second hearing will be the Federal perspective and focus on the efforts being made across the Federal Government to ensure interoperability. More specifically, we will closely examine the SAFECOM E-Government initiative and our radio spectrum challenges.

Before we begin, I understand that Congressman Weldon of Pennsylvania and Congresswoman Harman of California have both asked to join us today on the panel for this hearing. By unanimous consent, I would ask the subcommittees allow their participation. Seeing no objection, we welcome Mr. Weldon and Ms. Harman to this hearing.

On behalf of the subcommittee that I have the privilege to chair, let me continue to extend my appreciation to Mr. Shays and his subcommittee for their leadership in this very important issue.

In a moment I will yield to Mr. Shays for his opening remarks and thoughts from his committee's perspective. I did want to take a moment, though, to convey a few thoughts from the Subcommittee on Technology's perspective that we have been reviewing this year.

The Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census has held a number of comprehensive oversight hearings this year on our Federal E-Government initiatives, from E-Payroll and E-Recruitment to E-Records and Federal IT Consolidation. We have also held E-Government oversight hearings to address those specific initiatives whose success is dependent upon coordination and cooperation with State and local officials such as we have here on panel one.

During these hearings, we have uncovered billions of dollars in annual savings that can be achieved from E-Government and focused on the vast opportunities we have to provide more efficient services to our citizens. I am pleased to report that despite some funding challenges, most of the E-Government agenda is on target and making progress each day.

Conversely, today's hearing on SAFECOM raises some anxiety and concern in terms of progress and our ability to succeed. Let us be frank: the undeniable need to succeed with this initiative makes SAFECOM perhaps the most important of all these initiatives occurring across the Federal Government. SAFECOM is not just about improving Government, but SAFECOM is about the mission and role of our Federal Government.

My concern is grounded by the fact that while we have more than enough folks providing suggestions on how to spend our Homeland Security grant money, no one seems particularly interested in taking responsibility for the performance and results associated with that spending, nor will anyone be held responsible if we have another tragedy, this time, perhaps, a tragedy with expensive, new, incompatible, non-working equipment instead of the old, incompatible, non-working equipment.

Without stakeholder agreement and results, I think the only thing "SAFE" about SAFECOM is that we can safely predict the mother of all finger pointing. That is why this hearing is so crucial. We must determine the role of each stakeholder and create an atmosphere of accountability and responsibility for results. We can-

not achieve a half-a-loaf on this initiative; we cannot claim small wins; we must succeed with SAFECOM in its entirety.

So what is the current atmosphere for preparation and prioritizing our spending for first responders? First, our Homeland Security grants have very few strings attached that require interoperability of equipment across regions and States or with the Federal Government. Our SAFECOM managers have no authority to require the FCC to reorganize or designate additional bandwidth for emergency needs. Therefore, we may well be spending billions of dollars on new equipment that will then not work properly once the power switch is flipped on. We must not forget our State and local elected officials who are doing their best to secure any money they can for their jurisdictions, notwithstanding a lack of bandwidth or an inability to become interoperable with adjacent jurisdictions.

We must also not forget Congress' role in both creating and solving this chaos. Given congressional oversight responsibility, Congress legislatively joins the FCC in allocating the limited and fragmented radio spectrum between commercial communication entities, television broadcast companies, and our State and local governments. And as we appropriate funds, every Member of Congress is seeking his or her fair share of grants for their district or State, regardless of communications standards or regulations created inside the Beltway by the good people managing the SAFECOM initiative.

In addition to the challenges and pressures facing each stakeholder to perform, the SAFECOM initiative has the added pressure of having to produce concrete results with little time to coordinate standards. As tax money builds up in accounts intended to purchase equipment once standards and frequency questions are resolved, enormous pressure builds to push that cash out the door as quickly as possible and deal with the details later.

Unfortunately, the devil is in those details when it comes to interoperability. Adding to that challenge is the interagency role SAFECOM plays to develop interoperability standards and integrate our own Federal agencies. SAFECOM's challenges are enormous.

From the FCC perspective, we will no doubt hear today of the details related to separate frequency bands used by first responders and how they cannot be bridged by systems equipment. We will also hear the particulars between the 700 megahertz band versus the 800 megahertz band versus the 50 megahertz band. My interest is focused on the process and a time line in which the FCC will make decisions on spectrum allocation or reallocation so that all stakeholders, including vendors, will be ready to coordinate interoperable solutions. It is clear that we cannot move forward or expect results without some decisions being made by those in positions of authority at the FCC and OMB. If not, we will have to solve these issues here on Capitol Hill, which is not the preferred solution.

I am pleased we have nearly every stakeholder group represented here today to discuss their challenges, their roles, their responsibilities, and even what business-as-usual sacrifices they plan to make in order to generate real results. While I am not certain

we will have all the answers today, I am confident that we will have an opportunity to make progress with our E-Gov leadership and FCC leadership testifying side by side before Congress for the first time ever on this issue.

Before yielding to Chairman Shays, I would also like to extend a special welcome to Marilyn Ward, who happens to be the manager of public safety communications for Orange County, FL. We have a bit more experience in Florida than we would like responding to emergencies, but we have learned a lot that I believe will be useful toward improving our Nation's first responder communications. Ms. Ward's performance and know-how have, in fact, earned her the chairmanship of the National Public Safety Telecommunications Council, who she represents here today.

[The prepared statement of Hon. Adam H. Putnam follows:]

TOM DAVIS, VIRGINIA
CHAIRMAN

DAN BURTON, INDIANA
CHRISTOPHER SHAYS, CONNECTICUT
ILEANA ROS-LEHTINEN, FLORIDA
JOHN M. MCHUGH, NEW YORK
JOHN L. MICA, FLORIDA
MARK E. SOUDER, INDIANA
STEVEN C. LATOURETTE, OHIO
DOUG OSE, CALIFORNIA
RON LEWIS, KENTUCKY
JO ANN DAVIS, VIRGINIA
TODD RUSSELL PLATTS, PENNSYLVANIA
CHRIS CANNON, UTAH
ADAM H. PUTNAM, FLORIDA
EDWARD L. SCHROCK, VIRGINIA
JOHN J. DUNCAN, JR., TENNESSEE
JOHN SULLIVAN, OKLAHOMA
NATHAN DEAL, GEORGIA
CANDICE MILLER, MICHIGAN
TIM MURPHY, PENNSYLVANIA
MICHAEL R. TURNER, OHIO
JOHN R. CARTER, TEXAS
WILLIAM J. JANKLOW, SOUTH DAKOTA
MARSHA BLACKBURN, TENNESSEE

ONE HUNDRED EIGHTH CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON GOVERNMENT REFORM

2157 RAYBURN HOUSE OFFICE BUILDING

WASHINGTON, DC 20515–6143

MAJORITY (202) 225-5074
FACSIMILE (202) 225-3974
MINORITY (202) 225-5051
TTY (202) 225-6852

www.house.gov/reform

HENRY A. WAXMAN, CALIFORNIA
RANKING MINORITY MEMBER

TOM LANTOS, CALIFORNIA
MAJOR R. OWENS, NEW YORK
EDOLPHUS TOWNS, NEW YORK
PAUL E. KANJORSKI, PENNSYLVANIA
CAROLYN B. MALONEY, NEW YORK
ELIJAH E. CUMMINGS, MARYLAND
DENNIS J. KUCINICH, OHIO
DANNY K. DAVIS, ILLINOIS
JOHN F. TIERNEY, MASSACHUSETTS
WM. LACY CLAY, MISSOURI
DIANE E. WATSON, CALIFORNIA
STEPHEN F. LYNCH, MASSACHUSETTS
CHRIS VAN HOLLEN, MARYLAND
LINDA T. SANCHEZ, CALIFORNIA
C.A. DUTCH RUPPERSBERGER
MARYLAND
ELEANOR HOLMES NORTON,
DISTRICT OF COLUMBIA
JIM COOPER, TENNESSEE
CHRIS BELL, TEXAS

BERNARD SANDERS, VERMONT,
INDEPENDENT

SUBCOMMITTEE ON TECHNOLOGY, INFORMATION POLICY, INTERGOVERNMENTAL RELATIONS AND THE CENSUS
Congressman Adam Putnam, Chairman

OVERSIGHT HEARING
STATEMENT BY ADAM PUTNAM, CHAIRMAN

Hearing topic: *"First Responder Interoperability: Can You Hear Me Now?"*

Thursday, November 6, 2003
10:00 a.m.
Room 2154 Rayburn House Office Building

OPENING STATEMENT

The Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census has held a number of comprehensive oversight hearings this year on our federal E-Government initiatives, from E-Payroll and E-Recruitment to E-Records and Federal IT Consolidation. Our Subcommittee has also held several E-Government oversight hearings to address those specific initiatives whose success is clearly dependent on extensive coordination and cooperation with our state and local governments, including the E-Grants initiative and GeoSpatial One-Stop.

During all of these hearings, the Subcommittee uncovered billions of dollars in annual savings that can be achieves from E-Government, and focused on the vast opportunities we have to provide more efficient services for our citizens. I am pleased to report that despite some funding challenges, most of the E-Government agenda is on-target and making progress as each day passes.

Conversely, today's hearing on SAFECOM raises some anxiety and concern in terms of progress and our ability to succeed. Let's be frank: the undeniable need to succeed with this initiative makes SAFECOM perhaps the most important of all the initiatives occurring across our federal government. In fact, SAFECOM is not just about improving government, but rather, SAFECOM is about the mission and role of our federal government.

My concern is grounded by the fact that while we have more than enough folks providing suggestions on how to spend our limited Homeland Security grant money, no one seems very interested in taking full responsibility for the performance and actual results associated with this spending nor will anyone be held responsible if we have – heaven help us -- another tragedy . . . but this time, perhaps a tragedy with expensive, new, incompatible, non-working equipment instead of the old, incompatible, non-working, equipment.

Without stakeholder agreement and results, I think the only thing "SAFE" about "SAFECOM" is that we can "SAFELY" predict "the mother of all" finger pointing. That is why this hearing is so critical. We must determine the role of each stakeholder and create an atmosphere of accountability and responsibility for performance and results. We cannot achieve "half-a-loaf" on this initiative, we cannot claim small wins, we must succeed with SAFECOM in its entirety.

So what is the current atmosphere for preparing and prioritizing our spending for first responders? First, our Homeland Security grants have very few strings attached that require interoperability of equipment across regions and states or with the federal government. Next, our SAFECOM managers have absolutely no authority to require the FCC to reorganize or designate additional bandwidth for emergency needs. Therefore, we may well be spending billions of dollars on shiny new equipment that will then not work properly once the power switch is turned on. Next, we must not forget our state and local elected officials, who are doing their best to secure any money they can get for their jurisdictions, notwithstanding a lack of bandwidth or an inability to become interoperable with adjacent jurisdictions or older technology.

We must also not forget Congress' role in both creating and solving this chaos. Given Congressional oversight responsibility, Congress legislatively joins the FCC in allocating the limited and fragmented radio spectrum between commercial communication entities, television broadcasting companies, and our state and local governments. And as we appropriate funds, every member of Congress is seeking his fair share of grant monies for his district or state, regardless of any communications standards or regulations created inside the Beltway by the good people managing the SAFECOM initiative.

In addition to the challenges and pressures facing each stakeholder to perform, the SAFECOM initiative has the added pressure of having to produce concrete results with little time to coordinate standards. As tax money builds-up in accounts intended to purchase equipment once standards and frequency questions are resolved, enormous pressure builds to push that cash out the door as quickly as possible . . . and perhaps deal with the details later.

Unfortunately, the devil is in the details when it comes to interoperability. Adding to that challenge is the interagency role SAFECOM plays to develop interoperability standards and integrate our own federal agencies. SAFECOM's challenges are enormous.

From the FCC perspective, we will no doubt hear today of the finer details related to separate frequency bands used by first responders and how they cannot be bridged by systems equipment. We will also hear particulars about the 700-megahertz band versus the 800-megahertz band versus the 50-megahertz band. My interest, however, will be focused on the process and a timeline in which the FCC will make decisions on spectrum allocation or reallocation so that all stakeholders – including equipment vendors – will be ready to coordinate interoperable solutions. It is clear that we cannot move forward or expect positive complete results without some decisions being made by those in positions of authority at the FCC and perhaps OMB. If not, we will have to solve these issues right here on Capitol Hill . . . which is not the preferred solution by any means.

I am very pleased we have nearly every stakeholder group represented here today to discuss their challenges, their roles, their responsibilities, and even what business-as-usual sacrifices they plan to make in order to generate real results. While I am not certain we will have all the answers today, I am confident we have an opportunity to make some progress today with our E-Gov leadership and FCC leadership testifying next to each other before Congress for the first time ever on this issue.

Before yielding to Chairman Shays, I would also like to extend a special welcome to Marilyn Ward, who happens to be the Manager of Public Safety Communications for Orange County, Florida. We have a bit more experience in Florida than we perhaps would like responding to emergencies, but we have learned a lot that I believe will be useful towards improving our country's first responder communications. Ms. Ward's performance and know-how have, in fact, earned her the Chairmanship of the National Public Safety Telecommunications Council, which she represents here today.

###

Mr. PUTNAM. With that, I will take this opportunity to yield to the ranking member of my subcommittee, Mr. Clay, before returning to Chairman Shays.

Mr. Clay.

Mr. CLAY. Thank you, Mr. Chairman. And thank you and Chairman Shays for calling the meeting. At this time I would like to yield to the ranking member of the Intelligence Committee, Representative Jane Harman. Thank you.

Ms. HARMAN. Well, I thank you for yielding, Mr. Clay, and I thank the chairmen of these two subcommittees for letting me crash the party; I really appreciate it. Chairman Shays and I have had a brother-sister act going for years on national security and homeland security issues, and Chairman Putnam, I am very grateful that you would let me come today, and to your ranking member, I am very grateful that he would yield me some time.

Mr. Chairmen, the deaths of 121 firefighters on September 11, 2001 might have been prevented if their colleagues in the NYPD were able to warn them in time that the World Trade Center towers were about to collapse. The problem was the lack of interoperable communications.

Since September 11, I have maintained a virtual total focus on two issues that I think are the key issues we need to fix. One is information sharing, also known as connecting the dots, and the other is interoperable communications. We have made real progress on information sharing over the past 2 years in a variety of ways, but we are essentially nowhere, repeat, nowhere, on interoperability.

As we sit here today, thousands of California firefighters in my home State are in the end stages of battling the worst wildfires, in fact, the worst natural disaster my State has ever experienced. The fires have already taken 22 lives, including 1 firefighter, destroyed 3,500 homes, and consumed more than 750,000 acres of brush and timber. More than 80,000 citizens had to be evacuated from their homes.

Firefighters from all over California and neighboring Arizona coordinated their actions in real time to fight a menace that rapidly spread, shifted direction, and put both citizens' and firefighters' lives in mortal danger.

And yet, Los Angeles County Fire Chief Mike Freeman informs me his firefighters were often unable to coordinate efforts with firefighters from neighboring jurisdictions not because they didn't have the finest men and women on the job, but because they could not communicate with each other over their radios. "It is the same problems we always have communicating on our radios with other agencies," he said. "Different counties' radios are often on completely different, incompatible frequencies, hindering our efforts to protect lives and property."

LA County firefighters adapted by handing out some of their own radios to other departments, but this did not always work. In one instance, in Claremont, CA, a district represented by the chairman of our Rules Committee, Assistant Chief Michael Morgan's firefighters actually had to drive around and track down firefighters from a neighboring county to give them crucial information because they could not communicate with them by radio. I mean, this

sounds like prehistoric times, using physical runners, at least they had vehicles, to communicate information because technology failed. This meant that in some cases coordination was impossible because they were separated by dangerous fire areas. This is unacceptable and completely unnecessary. It is a sad day when the talents and skills of brave men and women are undermined by a lack of technology.

Today's witnesses will, I am sure, tell us that the key factors for interoperable communications are coordination, equipment, training, standards, and radio spectrum. It is spectrum that is the Achilles heel, and if Congress can't make good on its promise to provide the necessary spectrum for first responders, the other efforts, in my view, will be wasted, because radios need to be on the same frequency in order to talk to each other. And that is why Congressman Curt Weldon and I introduced H.R. 1425, the Homeland Emergency Respond Operations Act [HERO], earlier this year.

Mr. Chairman, the 1997 Balanced Budget Act required the FCC to reallocate radio spectrum for public safety from a band that is scheduled to be vacated no later than December 31, 2006. Unfortunately, the same law postpones transferring that band indefinitely if more than 15 percent of households are unable to receive digital television.

The practical effect of this unfortunate loophole is that firefighters, police, and emergency personnel can't even begin planning for next generation interoperable communication systems because they cannot be sure that spectrum will be available.

I see all the witnesses nodding. I know you agree with me.

The HERO Act would close this loophole and ensure the availability of the spectrum. This act also lays the foundation for a next generation of voice and data communications systems that can enable first responders to take advantage of the communications revolution that is already sweeping through the private sector and the military.

For example, in Iraq and Afghanistan, U.S. forces capitalized on stunning advances in information technology. The military's integrated, cutting-edge communication systems rapidly coordinated and shared data, undoubtedly saving American lives. Likewise, in the private sector, we see a wide variety of innovative products hitting the markets allowing consumers to increasingly receive all the customized voice and data services they want wherever they are.

The dividends of a similar revolution in public safety and homeland security could be directly measured in lives saved. With region-wide voice and data systems, firefighters in California could have had real-time tracking maps to show progress of the fires, location of other firefighters, critical infrastructure, blueprint layouts of chemical plants or oil refineries, and in many cases locations of citizens who needed to be rescued.

In conclusion, Mr. Chairman, the HERO Act is endorsed by the National Association of Counties, you are going to hear about it in just a moment; the International Association of Fire Chiefs; the International Association of Chiefs of Police; the Association of Public Safety Communications Officers; the National League of Cities; the National Volunteer Fire Council; the International Union

of Police Associations, all of whose letters of endorsement I am attaching to my statement today.

By showing leadership now and moving forward with interoperability legislation like HERO, we can make vital and urgent progress in better protecting our citizens. I hope your subcommittees will join us. To adjourn with no action on H.R. 1425 is to leave thousands, perhaps millions, of first responders vulnerable.

I thank all of you for the time; I really appreciate it. I urge you to review this legislation; it is endorsed by every international public safety group on the planet Earth, and I can tell you from many conversations with first responders, it would have made a real difference in the California fires and it will surely make a real difference in protecting Americans at home. If we have this technology for our military abroad, we deserve to have this technology for our first responders, who are really our frontier fighters at home. Thank you very much.

[The prepared statement of Hon. Jane Harman follows:]

House Committee on Government Reform
Subcommittees on National Security, Emerging Threats and International Relations
and
Technology, Information Policy, Intergovernmental Relations and the Census
Joint Hearing on First Responder Inter-Operability
Thursday, November 6, 2003

Opening Statement: Congresswoman Jane Harman (CA-36)

Chairmen Shays and Putnam, and Ranking Members Kucinich and Clay: 121 firefighters died needlessly on September 11, 2001 because their colleagues in the NYPD could not warn them in time that the World Trade Center towers were about to collapse.

Since 9/11, I've maintained an almost exclusive focus on two issues: information sharing and inter-operable communications. We've made definite progress improving information sharing over the past two years, but we are nowhere, repeat, nowhere on inter-operability.

As we sit here today, thousands of California firefighters are in the end stages of battling the worst wildfires – in fact the worst natural disaster -- my state has ever experienced. The fires have already taken 22 lives, including one firefighter, destroyed 3,500 homes, and consumed more than 750,000 acres of brush and timber. More than 80,000 citizens had to be evacuated from their homes.

Firefighters from all over California and neighboring Arizona coordinated their actions in real time to fight a menace that rapidly spread, shifted direction and put both citizens' and firefighters' lives in mortal danger.

And yet, Los Angeles County Fire Chief Michael Freeman informs me his firefighters were often unable to coordinate efforts with firefighters from neighboring jurisdictions, not because they didn't have the finest men and women on the job, but because they could not communicate with each other over their radios. "It's the same problems we always have communicating on our radios with other agencies," he said. "Different counties' radios are often on completely different, incompatible frequencies, hindering our efforts to protect lives and property."

LA County firefighters adapted by handing out some of their own radios to other departments but this did not always work. In one instance, in Claremont, Assistant Chief Michael Morgan's firefighters actually had to drive around and track down firefighters from a neighboring county to give them crucial information because they could not communicate with them by radio. This meant that, in some cases, coordination was impossible because they were separated by dangerous areas. This is unacceptable and completely unnecessary. It is a sad day when the talents and skills of brave men and women are undermined by a lack of technology.

Today's witnesses will likely tell us that the key factors for inter-operable communications are coordination, equipment, training, standards and radio spectrum. But it is spectrum that is the

Achilles heel. If Congress can't make good on its promise to provide the necessary spectrum for first responders, the other efforts will be wasted because radios need to be on the same frequency to talk to each other. That is why Rep. Curt Weldon and I introduced the Homeland Emergency Response Operations (HERO) Act earlier this year.

The 1997 Balanced Budget Act required the FCC to re-allocate radio spectrum for public safety, from a band that is scheduled to be vacated no later than December 31, 2006. Unfortunately, the same law postpones transferring that band indefinitely if more than15% of households are unable to receive digital television.

The practical effect of this unfortunate loophole is that firefighters, police and emergency personnel can't even begin planning for next generation inter-operable communication systems because they cannot be sure when the spectrum will be available.

The HERO Act would close this loophole and ensure the availability of the spectrum. This act also lays the foundation for a next generation of voice and data communications systems that can enable first responders to take advantage of the communications revolution that is already sweeping through the private sector and the military.

In Iraq and Afghanistan, US forces capitalized on stunning advances in information technology. The military's integrated, cutting-edge communication systems rapidly coordinated and shared data, undoubtedly saving American lives. Likewise, in the private sector we see a wide variety of innovative products hitting the markets allowing consumers to increasingly receive all the customized voice and data services they want wherever they are.

The dividends of a similar revolution in public safety and homeland security could be directly measured in lives saved. With region-wide voice and data systems, firefighters in California could have had real time tracking maps to show progress of the fires, locations of other firefighters, critical infrastructure, blueprint layouts of chemical plants or oil refineries and in many cases, locations of citizens who needed to be rescued.

The HERO Act is endorsed by the International Association of Fire Chiefs (IAFC), the International Association of Chiefs of Police (IACP), the Association of Public-Safety Communications Officers (APCO), the National League of Cities, the National Volunteer Fire Council, and the International Union of Police Associations, all of whose letters of endorsement I have attached to my opening statement..

By showing leadership now and moving forward with inter-operability legislation like the HERO Act, we can make vital and urgent progress in better protecting our citizens.

International Association of Fire Chiefs
4025 Fair Ridge Drive • Fairfax, VA 22033-2868
Telephone: 703-273-0911
Fax: 703-273-9363
Internet: www.iafc.org

June 5, 2003

The Honorable Jane Harman
U. S. House of Representatives
Washington, D. C. 20515

RE: HR 1425

Dear Representative Harman:

The International Association of Fire Chiefs thanks you for introducing this important legislation. The IAFC gives its wholehearted support to this bill and will work toward its successful passage into law.

Congress, in passing the Balanced Budget Act of 1997, required the Federal Communications Commission to re-allocate an additional 24 MHz of radio spectrum for public safety. The allocation was made from a portion of the radio spectrum that will become vacant once television stations on channels 60 – 69 convert to digital television. The FCC did as required, by allocating specific radio spectrum (channels 63, 64, 68, and 69) and adopting rules for efficient and interoperable public safety operations. This allocation doubles the amount of radio spectrum available for public safety and addresses some of the recommendations made by two federal advisory committees on public safety communications.

There exists in law, however, a barrier to the scheduled transfer of that spectrum to public safety on the final date of December 31, 2006. The 1997 legislation allows television operations to continue existing operations on these channels until that date or until some unknown date beyond that when at least 85% of television households in the relevant communities have access to digital television. This uncertainty is preventing many state and local governments from making any real plans or funding commitments to use the newly allocated spectrum. Public safety agencies need this spectrum today – not some distant, unknown future date. HR 1425 resolves this serious problem by establishing a date certain that all of the channels allocated to public safety will be available.

The need for this spectrum continues to be urgent. We are all too aware of the communications failures that have occurred at major disasters – hurricanes, earthquakes, terrorist incidents, etc. There are some technologies that can help with short term solutions, but the need for new and clear spectrum is now. The communications capabilities of fire/emergency medical services and law enforcement are restricted by the limited amount of radio spectrum allocated for public safety operations.
In many parts of the United States, especially major metropolitan areas, there are insufficient radio frequencies available to accommodate current and future public safety

communications needs, which include both voice and high speed data transmissions. Limited spectrum availability has also forced agencies to operate on several different, incompatible radio frequency bands. The result is a lack of "interoperability" which often makes it difficult if not impossible for fire, EMS, law enforcement, and other emergency responders from differing agencies to communicate in the field, thus endangering the safety of emergency personnel and the public.

We very much appreciate your leadership on this extremely important issue for public safety.

Sincerely,

Randy R. Bruegman

Chief Randy R. Bruegman
President

06/06/2003 10:09 FAX

APCO International

ASSOCIATION OF PUBLIC-SAFETY COMMUNICATIONS OFFICIALS INTERNATIONAL, INC.

June 5, 2003

EXECUTIVE DIRECTOR
John K. Ramsey
ramseyj@apco911.org

APCO INTERNATIONAL
HEADQUARTERS
351 N. Williamson Boulevard
Daytona Beach, FL 32114-1112
888-APCO911 OR 904-322-2500
www.apco911.org

BOARD OF OFFICERS

PRESIDENT
Vincent R. Stile
Suffolk County Police
Communications Bureau
30 Yaphank Avenue
Yaphank, NY 11980
631-852-6431
pres-elect@apco911.org

PRESIDENT-ELECT
Gregory S. Ballentine
Mid America Regional Council
600 Broadway
300 Rivergate Center
Kansas City, MO 64105-1554
1-816-474-4240
first-vp@apco911.org

FIRST VICE PRESIDENT
Diana K. Borash
Director Allina Health Systems
167 Grand Avenue
St. Paul, MN 55102
(651)228-8405
second-vp@apco911.org

INTERNATIONAL VICE PRESIDENT
Kenneth Mort
BAPCO
PO Box 374
Lincoln LN1 1FY
United Kingdom
+44 1522 575542
ceo@bapco.uk.org

The Honorable Jane Harman
U.S. House of Representatives
Washington, DC 20515

Dear Representative Harman:

On behalf of the over 16,000 members of APCO International, I want to express my appreciation for your support for public safety communications issues and, in particular, your sponsorship of the Homeland Emergency Response Organizations (HERO) Act, H.R. 1425.

Police, fire, EMS and other public safety agencies face severe shortages of radio spectrum in much of the nation, and need additional communications capacity to promote critical interoperability between personnel responding to emergencies in the field. Congress responded to this need in 1997, by requiring the FCC to allocate 24 MHz of new radio spectrum for public safety services. The reallocated spectrum is in the Upper 700 MHz Band, which is also used by certain channel 60-69 television stations. Unfortunately, the 1997 legislation did not establish a firm date for this spectrum to become available, leaving it instead to be subject to the open-ended digital television (DTV) transition schedule. Thus, we support the HERO Act as it will establish December 31, 2006, as a firm date to clear this spectrum for public safety use.

Once again, thank you for your support of public safety.

Sincerely,

Vincent R. Stile

Vincent Stile, President
APCO International, Inc.

JUN-06-2003 10:41 NAT'L LEAGUE OF CITIES

To strengthen and promote cities as centers of opportunity, leadership, and governance.

National League of Cities

1301 Pennsylvania Ave., N.W.
Washington, DC 20004-1763
202-626-3000
Fax: 202-626-3043
www.nlc.org

2003 Officers

President
John DeStefano, Jr.
Mayor, New Haven, Connecticut

First Vice President
Charles Lyons
Selectman,
Arlington, Massachusetts

Second Vice President
Anthony A. Williams
Mayor, Washington, DC

Immediate Past President
Karen Anderson
Mayor, Minnetonka, Minnesota

Executive Director
Donald J. Borut

June 6, 2003

The Honorable Jane Harman
Ranking Member
House Permanent Select Committee on Intelligence
U.S. House of Representatives
Washington, DC 20515

The Honorable Curt Weldon
U.S. House of Representatives
Washington, DC 20515

Dear Representatives Harman and Weldon:

On behalf of the National League of Cities 17,000 direct member cities, we are writing to express our strongest support for H.R. 1425, "The Homeland Emergency Response Operations (HERO) Act." As you know, the tragic events of September 11 made it abundantly clear that our first responders are in dire need of improved communications. The HERO Act takes an important step in helping remedy this problem by providing first responders with badly needed access to broadcast frequencies for communications. Your continued leadership in the area of public safety communications has been applauded by local elected officials across the nation.

The strengthening of our nation's public safety communications infrastructure has never been more important to our nation's security. The current capabilities of law enforcement, fire, emergency medical services, disaster relief, and other emergency personnel remain severely restricted by the limited amount of spectrum allocated for public safety purposes. This limited availability of spectrum has forced emergency agencies to operate on several different and incompatible radio frequency bands, resulting in a lack of "interoperability" for communication between police, fire, and other emergency responders.

As you know, the Balanced Budget Act of 1997 required the Federal Communication Commission (FCC) to reallocate for public safety purposes that portion of radio spectrum used by television stations on channels 60-69. However, actual public safety use of this spectrum is blocked indefinitely as current law allows television stations to retain these channels until December 31, 2006, or until 85 percent of the television households in the community have access to digital television, whichever is later. Absent a change in the law, public

Past Presidents: **Clarence E. Anthony**, Mayor, South Bay, Florida • **William H. Hudnut, III**, Vice Mayor, Town of Chevy Chase, Maryland • **Sharpe James**, Mayor, Newark, New Jersey • **Bob Knight**, Mayor, Wichita, Kansas • **Brian J. O'Neill**, Councilman, Philadelphia, Pennsylvania • **Cathy Reynolds**, City Council President, Denver, Colorado • ***Directors:*** **Brenda S. Burger**, Mayor, Watertown, South Dakota • **Ronald Bates**, Councilmember, Los Alamitos, California • **Sally D. Bowie**, Mayor, Centerville, Ohio • **Conrad W. Bowers**, Mayor, Bridgeton, Missouri • **Rozella Boyd**, Councillor, Indianapolis, Indiana • **Michael S. Bushkovitz**, Mayor, Swansea, Illinois • **Steve Burkholder**, Mayor, Lakewood, Colorado • **Leo W. Chaney, Jr.**, Councilmember, Dallas, Texas • **Roger C. Claus**, Mayor, Bolingbrook, Illinois • **Catherine F. Connolly**, Executive Director, League of Arizona Cities and Towns • **Jim Dailey**, Mayor, Little Rock, Arkansas • **Alex G. Fekete**, Mayor, Pembroke Pines, Florida • **C. Virginia Fields**, Manhattan Borough President, New York, New York • **Carolyn L. Floyd**, Mayor, Kodiak, Alaska • **Del Haag**, Council Member, Buffalo, Minnesota • • **Scott A. Hancock**, Executive Director, Maryland Municipal League • **S. Ellis Hankins**, Executive Director, North Carolina League of Municipalities • **George K. Harvell, Jr.**, Mayor, Millington, Tennessee • **Charles Jennings**, Commissioner, Arkansas City, Kansas • **Willie Johnson**, Councilmember, Oklahoma City, Oklahoma • **Helen Kavanagh**, City Clerk, Carson, California • **Mamie E. Locke**, Mayor, Hampton, Virginia • **Christopher G. Lockwood**, Executive Director, Maine Municipal Association • **Cynthia McCallum**, Council Member, Madison, Alabama • **Don Meier**, Executive Director, League of Kansas Municipalities • **Carmen Moore**, Commissioner, Fort Lauderdale, Florida • **Nancy Nathanson**, Councilmember, Eugene, Oregon • **Kathleen M. Novak**, Mayor, Hendrykson, Colorado • **Brenda Allison Oliver**, Mayor, Tyrus, North Carolina • **Alex Padilla**, City Council President, Los Angeles, California • **George Parks**, Executive Director, Wyoming Association of Municipalities • **T. J. Patterson**, Council Member, Lubbock, Texas • **Alicia D. Pisa**, Mayor, Pru Ann, Salina, Michigan • **Marie Lopez Rogers**, Vice Mayor, Avondale, Arizona • **Ann Simeak**, Council Member, Oklahoma City, Oklahoma • **Jennie Smith**, Executive Director, Mississippi Municipal League • **Daniel Sosa**, Council Member, Saginaw, Michigan • **Dan Thompson**, Executive Director, League of Wisconsin Municipalities • **Vera White-Reynolds**, Council Member, Harrisburg, Pennsylvania • **Billy D. Williams**, Councilman, Florence, South Carolina

Recycled Paper

safety's use of this spectrum may be put off for the indefinite future and the resulting uncertainty over when - or if - this spectrum will be vacated prevents local governments from making plans or funding commitments for the use of this spectrum.

Local elected officials across the nation support legislation revising the Balanced Budget Act of 1997 to ensure that radio spectrum for public safety use be made available to state and local governments as soon as possible. Accordingly, NLC supports H.R. 1425, the HERO Act, which establishes a "date certain," December 31, 2006, as a deadline for television stations to vacate channels allocated for public safety use by the FCC. By establishing a firm deadline for television stations to vacate this spectrum, local governments can begin the lengthy planning process necessary for the use of this spectrum by emergency personnel.

Should you or your staff require additional information on this matter, please contact Juan Otero, Principal Legislative Counsel, at (202) 626-3022.

Very truly yours,

Donald J. Borut
Executive Director

cc: Members of the House Energy and Commerce Committee

National Volunteer Fire Council
1050 17th Street, NW, Suite 490, Washington, DC 20036; 202/887-5700 phone; 202/887-5291 fax
www.nvfc.org • nvfcoffice@nvfc.org

June 6, 2003

The Honorable Jane Harman
2400 Rayburn House Office Building
Washington, DC 20515-0536

Dear Representative Harman:

The National Volunteer Fire Council (NVFC) is a non-profit membership association representing the more than 800,000 members of America's volunteer fire, EMS, and rescue services. Organized in 1976, the NVFC serves as the voice of America's volunteer fire personnel in over 28,000 departments across the country. On behalf of our membership, I would like to express my full support for your legislation, the Homeland Emergency Response Operations (HERO) Act (H.R. 1425), which is intended to ensure our nation's first responders have greater access to shared broadcast frequencies for interoperable radio communications.

As you know, on September 11, 1996, the Congressionally-mandated Public Safety Wireless Advisory Committee issued its Final Report recommending that 97.5 MHz of additional spectrum be made available for public safety by 2010, including approximately 25 MHz from TV channels 60-69 (746-808 MHz) that should be made available within five years from the date of the report -- September 11, 2001.

Your legislation sets a firm deadline of 2006 by which the Federal Communications Commission must give public safety agencies the broadcast spectrum first set aside for them by Congress in 1997. That spectrum, from 764-776 mhz and 794-806 mhz, is currently occupied by TV broadcasters on channels 63, 64, 68 and 69. Congress conditioned its transfer to public safety agencies on digital television reaching 85% of households. At present, only 1% of households have digital television and most analysts believe that few markets will reach that 85% threshold anytime in the coming decade. The HERO Act removes this threshold requirement.

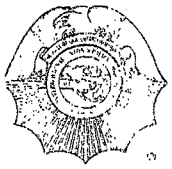
Once again, the NVFC commends your efforts to support America's fire service and we thank you for the leadership role you have taken on this issue. If you or your staff have any questions or comments feel free to contact Craig Sharman, NVFC Director of Government Relations at (202) 887-5700 ext. 12.

Sincerely,

Philip C. Stittleburg
Chairman

cc: California State Firefighter's Association

APR-01-2003 TUE 11:33 AM FAX NO.



INTERNATIONAL UNION OF POLICE ASSOCIATIONS AFL-CIO

THE ONLY UNION FOR LAW ENFORCEMENT OFFICERS

SAM A. CABRAL
International President
DENNIS J. SLOCUMB
International Executive Vice President Legislative Liaison
RICHARD A. ESTES
International Secretary-Treasurer

April 1, 2003

The Honorable Jane Harman
2400 Rayburn House Office Building
Washington, D.C. 20515

Dear Ms. Harmon:

On behalf of the International Union of Police Associations, AFL-CIO, I am proud to add our name to those supporting the **"Homeland Emergency Response Operations"** or **"HERO" Act.**

Communications is always one of the crucial components of critical incident management. Even prior to the tragedy of 9-11, emergency responders frequently identified their inability to effectively communicate with one another as a problem during post incident critiques. The events of that terrible day illustrated that point clearly for you and for the general public.

The Homeland Emergency Response Act will help ease the crowded airways. It will also help public safety and those supplying communication enhancements for us with the necessary frequencies to apply their burgeoning technology.

If there is anything I.U.P.A .can do to help move this legislation forward, I hope you or your staff will call on me.

Respectfully,

Dennis Slocumb
International Executive Vice President

Mr. PUTNAM. Thank you, Ms. Harman. We appreciate your insightful remarks. You have certainly been a leader on this and a number of other homeland and national security issues.

At this time I would like to introduce the chairman of the subcommittee who was the driving force behind this hearing, Christopher "Cassandra" Shays, "Cassandra" in that he has been issuing warnings on a number of these issues for years. Prior to the events of September 11th, his subcommittee had held more hearings than anyone else in the Congress, on the threats from Al-Qaida and other terrorist organizations. Prior to the creation of the Department of Homeland Security, he and Ms. Harman held or were participants in a number of the early discussions about the need for creation of such a department. He has been just a tireless advocate for the issues related to spectrum and pushing these issues forward, and we are delighted that he invited us to participate with him.

Mr. Shays.

Mr. SHAYS. Thank you very much, Mr. Chairman, and I just want to thank you for holding this hearing. I want to thank the full committee staff as well, because this has been an effort of the full committee and both our subcommittees, Mr. Chairman; also to welcome Congresswoman Harman, who has been taking such a strong stand on so many of these issues, and I had asked my staff, as soon as she had read the bill, I hope to God we are on her bill. So I had them check. This will be a bill that I can't wait to see pass, and we are well aware of why it hasn't. We have lots of different interest groups that are, in my judgment, putting their interests before the national interest, and we are going to have to take them on.

More than a year before September 11, 2001, the National Security Subcommittee heard testimony from first responders who had just participated in a tabletop exercise of emergency responses to a chemical attack. Among the first casualties in that scenario were internal and external communications by Federal, State, and local officials.

On September 15th of this year, we observed a similar exercise with similar results. It is hard to imagine that we still have this problem. Fully 2 years after what many saw in September 11th as a wake up call from hell, too many first responders still can't hear the alarm. Despite significant expenditures and some progress, public safety and emergency response communications remain a high tech Tower of Babel splintered by different electromagnetic, political and fiscal languages.

What stands in the way of first responder interoperability? Major impediments appear to be less a question of hardware or software than wetware, the human circuitry that must power enhanced connectivity. Linking more than 44,000 State and local agencies and over 100 Federal programs and offices for effective emergency response challenges entrenched cultures of intergovernmental mistrust. Interoperability threatens old ways of doing business, while pitting public use of limited radio frequency spectrum against new commercial wireless applications.

Efforts like the Wireless Public Safety Interoperable Communications Program, called SAFECOM, in the Department of Homeland

Security, referred to as DHS, face daunting near-and long-term obstacles: old and incompatible equipment not yet due to be replaced; misaligned planning and funding cycles; and narrow, fragmented public safety spectrum bands crowded between bursting commercial uses. In Connecticut's 4th District, which I represent, interference on public safety bands is a serious and growing problem.

Central to the apparent intractability of all these issues is the lack of technological and performance standards for interoperability. Unless State, local, and Federal public safety and emergency response agencies know exactly when, how, with whom, and on what frequencies they are supposed to be able to communicate, there is little chance randomly implemented, vendor driven technical upgrades will produce much more than accidental interoperability.

Real time communication capability in the face of the terrorist threat is a national security imperative. When the next attack comes, lives will be lost as a result of the technical gaps, jurisdictional stovepipes, and jumbled spectrum allocations still impeding effective public safety voice communication and data sharing, as Ms. Harman so eloquently pointed out. We need to know how and when SAFECOM and other Federal efforts will channel the current technological and political cacophony into the seamless network that will carry our most potent weapons against terror: accurate, timely information.

I want to thank Technology Subcommittee Chairman Adam Putnam again, and his staff again, for convening this joint hearing with us today. It is a small but fitting example of breaching jurisdictional barriers in the cause of greater interoperability.

We thank all our witnesses for their time and for the expertise they bring to this important discussion, and we look forward to the second hearing we will be having at 11:30 with government officials.

Thank you, Mr. Chairman.

[The prepared statement of Hon. Christopher Shays follows:]

TOM DAVIS, VIRGINIA,
CHAIRMAN

DAN BURTON, INDIANA
CHRISTOPHER SHAYS, CONNECTICUT
ILEANA ROS-LEHTINEN, FLORIDA
JOHN M. MCHUGH, NEW YORK
JOHN L. MICA, FLORIDA
MARK E. SOUDER, INDIANA
STEVEN C. LaTOURETTE, OHIO
DOUG OSE, CALIFORNIA
RON LEWIS, KENTUCKY
JO ANN DAVIS, VIRGINIA
TODD RUSSELL PLATTS, PENNSYLVANIA
CHRIS CANNON, UTAH
ADAM H. PUTNAM, FLORIDA
EDWARD L. SCHROCK, VIRGINIA
JOHN J. DUNCAN, JR., TENNESSEE
JOHN SULLIVAN, OKLAHOMA
NATHAN DEAL, GEORGIA
CANDICE MILLER, MICHIGAN
TIM MURPHY, PENNSYLVANIA
MICHAEL R. TURNER, OHIO
JOHN R. CARTER, TEXAS
WILLIAM J. JANKLOW, SOUTH DAKOTA
MARSHA BLACKBURN, TENNESSEE

ONE HUNDRED EIGHTH CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON GOVERNMENT REFORM

2157 RAYBURN HOUSE OFFICE BUILDING

WASHINGTON, DC 20515–6143

Majority (202) 225-5074
Facsimile (202) 225-3974
Minority (202) 225-5051
TTY (202) 225-6852

www.house.gov/reform

HENRY A. WAXMAN, CALIFORNIA,
RANKING MINORITY MEMBER

TOM LANTOS, CALIFORNIA
MAJOR R. OWENS, NEW YORK
EDOLPHUS TOWNS, NEW YORK
PAUL E. KANJORSKI, PENNSYLVANIA
CAROLYN B. MALONEY, NEW YORK
ELIJAH E. CUMMINGS, MARYLAND
DENNIS J. KUCINICH, OHIO
DANNY K. DAVIS, ILLINOIS
JOHN F. TIERNEY, MASSACHUSETTS
WM. LACY CLAY, MISSOURI
DIANE E. WATSON, CALIFORNIA
STEPHEN F. LYNCH, MASSACHUSETTS
CHRIS VAN HOLLEN, MARYLAND
LINDA T. SANCHEZ, CALIFORNIA
C.A. DUTCH RUPPERSBERGER,
MARYLAND
ELEANOR HOLMES NORTON,
DISTRICT OF COLUMBIA
JIM COOPER, TENNESSEE
CHRIS BELL, TEXAS

BERNARD SANDERS, VERMONT,
INDEPENDENT

SUBCOMMITTEE ON NATIONAL SECURITY, EMERGING THREATS,
AND INTERNATIONAL RELATIONS
Christopher Shays, Connecticut
Chairman
Room B-372 Rayburn Building
Washington, D.C. 20515
Tel: 202 225-2548
Fax: 202 225-2382
E-mail: hr.groc@mail.house.gov

Statement of Rep. Christopher Shays
November 6, 2003

More than a year before September 11th 2001, the National Security Subcommittee heard testimony from first responders who had just participated in a tabletop exercise of emergency responses to a chemical attack. Among the first casualties in that scenario were internal and external communications between federal, state and local officials.

On September 15th of this year, we observed a similar exercise, with similar results. Fully two years after what many saw as a wake up call from hell, too many first responders still can't hear the alarm. Despite significant expenditures and some progress, public safety and emergency response communications remain a high tech Tower of Babel splintered by different electromagnetic, political and fiscal languages.

What stands in the way of first responder interoperability? Major impediments appear to be less a question of hardware or software than wetware – the human circuitry that must power enhanced connectivity. Linking more than 44,000 state and local agencies and over 100 federal programs and offices for effective emergency response challenges entrenched cultures of intergovernmental mistrust. Interoperability threatens old ways of doing business while pitting public uses of limited radio frequency spectrum against new commercial wireless applications.

Efforts like the Wireless Public Safety Interoperable Communications Program, called "SAFECOM," in the Department of Homeland Security (DHS) face daunting near and long-term obstacles: old and incompatible equipment not yet due to be replaced, misaligned planning and funding cycles, and narrow, fragmented public safety spectrum bands crowded between bursting commercial uses. In Connecticut's 4th District, which I represent, interference on public safety bands is a serious and growing problem.

Central to the apparent intractability of all these issues is the lack of technology and performance standards for interoperability. Unless state, local and federal public safety and emergency response agencies know exactly when, how, with whom and on what frequencies they are supposed be able to communicate, there is little chance randomly implemented, vendor driven technical upgrades will produce much more than accidental interoperability.

Real time communication capability in the face of the terrorist threat is a national security imperative. When the next attack comes, lives will be lost as a result of the technical gaps, jurisdictional stovepipes and jumbled spectrum allocations still impeding effective public safety voice communications and data sharing. We need to know how, and when, SAFECOM and other federal efforts will channel the current technological and political cacophony into the seamless network that will carry our most potent weapons against terror – accurate, timely information.

I want to thank Technology Subcommittee Chairman Adam Putnam and his staff for convening this joint hearing with us today. It's a small, but fitting, example of breaching jurisdictional barriers in the cause of greater interoperability.

We thank all our witnesses for their time and for the expertise they bring to this important discussion. Welcome.

Mr. PUTNAM. Thank you, Mr. Chairman.

And the gentleman from Missouri, the ranking member of this subcommittee, graciously yielded his time to Ms. Harman, and so we will now recognize him for his opening statement.

Mr. Clay.

Mr. CLAY. Thank you, Mr. Chairman, and thanks for calling the hearing.

If it were not so dangerous to our public safety, I would find it somewhat amusing that there has been so much talk about getting first responders to talk to one another and so little change. We are not much better off than we were 10 years ago. In fact, we do not even have a coherent plan for where we want to go.

Understanding the problem is not too difficult. At the Federal level there are too many cooks stirring the soup, and none of them having interest of the first responders as a priority. At the local level we find the competition between police and fire departments for control in communities who are loathe to share revenues with the community next door.

The councilwoman from Maryland has an excellent idea for funding much of the cost of the new equipment for the nearly 40,000 jurisdictions throughout the United States: use the revenue from the spectrum auction. Unfortunately, that would require the FCC to change its tune. As we learned from her testimony, the FCC seems to be a part of the problem and not part of the solution.

Several of our witnesses will testify to the problems created by the lack of sufficient bandwidth for public safety and the interference problems caused by commercial traffic on adjacent bands. Again, these problems seem to point to the FCC for solutions, but the witnesses, instead, point to the possibility that planned future actions by the FCC will make matters worse, not better.

What is lacking the process is leadership. The SAFECOM project was designed to provide that leadership, but it too has a checkered past. It started out at the Department of Treasury and then was transferred to the Department of Homeland Security. As near as I can tell, the Department of Homeland Security is struggling to find its own direction. That is not a very good prescription for leadership.

This hearing will highlight the problems we face in making our system of first responders better capable of handling both day-to-day emergencies and disasters. Many of the problems are the same, whether it be closing the Woodrow Wilson Bridge because of a suicide attempt or responding to Hurricane Isabel. It is my hope that this hearing will spur greater commitment in the administration for solving some of these problems.

Again, thank you, Mr. Chairman, for calling this hearing, and I look forward to the testimony of the witnesses.

[The prepared statement of Hon. Wm. Lacy Clay follows:]

STATEMENT OF THE HONORABLE WM. LACY CLAY
AT THE JOINT HEARING ON
PUBLIC SAFETY INTEROPERABILITY

NOVEMBER 6, 2003

Thank you Mr. Chairman for calling this hearing. If it were not so dangerous to our public safety, I would find it somewhat amusing that there has been so much talk about getting first responders to talk to one another, and so little change. We are not much better off than we were 10 years ago. In fact, we do not even have a coherent plan for where we want to go.

Understanding the problem is not too difficult. At the federal level, there are too many cooks stirring the soup, and none of them have the interests of the first responders as a priority. At the local level we find the competition between police and fire departments for control, and communities who are loathe to share resources with the community next door.

The councilwoman from Maryland has an excellent idea for funding much of the cost of new equipment for the nearly 40,000 jurisdictions throughout the United States -- use the revenues from the spectrum auction. Unfortunately, that would require the Federal Communications Commission (FCC) to change its tune. As we learned from her testimony, the FCC seems to be a part of the problem and not a part of the solution.

Several of our witnesses will testify to the problems created by the lack of sufficient bandwidth for public safety, and the

interference problems caused by commercial traffic on adjacent bands. Again, these problems seem to point to the FCC for solutions, but the witnesses instead point to the possibility that planned future actions by the FCC will make matters worse not better.

What is lacking in this process is leadership. The SAFECOM project was designed to provide that leadership, but it too has a checkered past. It started out at the Department of Treasury and then was transferred to the Department of Homeland Security. As near as I can tell, the Department of Homeland Security is struggling to find its own direction. That is not a very good prescription for leadership.

This hearing will highlight the problems we face in making our system of first responders better capable of handling both day-to-day emergencies and disasters. Many of the problems are the same whether it be closing the Woodrow Wilson Bridge because of a suicide attempt, or responding to Hurricane Isabel. It is my hope that this hearing will spur greater commitment in the Administration for solving some of these problems.

Again, thank you Mr. Chairman for calling this hearing, and I look forward to the testimony from the witnesses.

Mr. PUTNAM. Thank you, Mr. Clay.

I want to recognize the members of the subcommittees who have joined us: Mr. Janklow, Ms. Sanchez, Mrs. Maloney, Mr. Ruppersberger.

At this time I will recognize Governor Janklow for his opening statement. You are recognized.

Mr. JANKLOW. Thank you very much.

You know, I really appreciate having this hearing today, and the witnesses, as I have seen the list, that are coming before the committee. There can't be any more important public safety issue than the ability to communicate when there is a crisis that starts. We in this country have the most Byzantine methods of communication that anybody can imagine. In my State, which is a State of only 750,000 people, but a landmass that is 40 percent of the size of France or Great Britain, we have with public safety, with respect to police, fire, ambulance, sheriffs, State highway patrol, various public safety agencies, we have high band and we have low band, we have VHF and we had UHF, we had AM and we had FM; and we had them all operating independent of each other. When the town of Spencer, South Dakota, was destroyed in a tornado about 6 years ago, we actually had to fly into our State a special communications system and hand out portable radios so all of the first responders, second, third, and fourth responders that showed up could communicate with each other.

As a result of that, frankly with some assistance from the Congress, and a lot of effort and money by the people of our State, we put together what I believe is the finest first responder communication system in existence; it is all on high band, it is 100 percent operative on VHF channels. We purchased and gave out free to every ambulance in the State, every hospital in the State, every nursing home in the State, every school bus in the State, every highway patrol vehicle, every sheriff vehicle, every police vehicle, every mayor's vehicle, all of the cabinet officials, the Governor's office, the State Department of Transportation and all their vehicles are now all on the same system that is linked together on a high band link system that works throughout the State. It is truly a model.

And I don't say it to brag. What I say it is to show you where you can go from where you have been in a very short period of time if you can get over the parochial issues that exist, of everybody wants to be boss.

Also in my State, we have 42 911 centers; 42 911 in a State with only 750,000 people. Folks just all feel that they all have to control their own 911 center, that they can't share one with anybody else. And to the extent you feel you can't share one with anybody else, you put yourself into a position where you jeopardize your citizens if there is something that is more severe than the average emergency that takes place.

There can't be anything more timely, Mr. Chairman, than this hearing, and the vital issues that affect the people of this Nation when there is a crisis and a disaster. The time to fix it is now, not after the next terrorist attack, not after the next attack on this country, not after the next major tornado or series of fires or floods or explosions.

Thank you very much.

Mr. PUTNAM. Thank you very much, Mr. Janklow.

We will recognize the gentlelady from California, Ms. Sanchez.

Ms. SANCHEZ. Thank you. And I would like to commend Chairman Shays and Ranking Member Kucinich for calling this hearing today.

Earlier this year I toured fire stations and police departments in my district, and each one of them highlighted to me the important need for communication systems that allow law enforcement, firefighters, and other first responders to talk to one another; and to this end the Los Angeles Fire Department, with minimal resources and funds, initiated an interoperability communications pilot program known as the Los Angeles Regional Tactical Communications System. We affectionately give it an acronym LARTCS. The system essentially enables them to speak directly to one another on one channel for both short-term and long-term incidents.

The pilot program only serves a portion of the county, and contrast that with the fact that the Los Angeles County Fire Department provides services to 58 municipalities and spans a 3,000 mile radius. This includes dense, urban, rural, and even remote suburban districts.

The LARTCS has already proven to be a success, particularly recently with the southern California wildfires that we experienced, and according to the Los Angeles County Assistant Fire Chief, Eric Eckberg, the fires hit the region really hard, but it could have been a lot worse if the communication system was not in place. I commend the foresight and the dedication of the Los Angeles County Fire Department, and all of the participating agencies that include law enforcement, EMS, and other first responders, for establishing this pilot program. And I just want to emphasize the fact again that the system was put into place with minimal funding.

This successful pilot program proves that Congress needs to do more to fund interoperability systems, whether it is through additional FEMA grants or cutting red tape, so that first responders of LA County and multiple counties throughout California and the Nation can talk to one another. We need to do more to protect our public servants as well as the general population; therefore, I look forward to the testimonies of the witnesses who can shed some light on this salient issue.

And again I would like to thank the chairman and ranking member for holding this hearing today.

Mr. PUTNAM. Thank you, Ms. Sanchez.

The gentlewoman from New York, Mrs. Maloney.

Mrs. MALONEY. I truly want to thank you for having this hearing; I think it is tremendously important. And as one who went to ground zero on September 11, our command central was destroyed on September 11 and we created one at the police plaza. That night, when I walked in, I asked what I could do, and they said, our radios don't work, get us radios. And I called Mr. Young, chairman of Appropriations, former chairman of Defense Appropriations, and asked for radios, and he had them flown in the next day from the military. But the radios that our fire department had did not even work, and it was our greatest vulnerability, I would say, was the lack of interoperability of communication on September 11 and

the lack of radios that worked, period. And it is clearly one of the saddest lessons that we learned during the terrorist attacks of September 11, was the importance of all emergency personnel to communicate with each other.

I want to share what happened on that terrible day. The New York City Police Department had a helicopter in the air around the towers and could see the North Tower glowing red, and radioed their officers to warn them of a collapse, allowing most of the police officers to exit safely. Regrettably, at the same time, numerous firefighters who were in the building could not hear the announcement to leave because their radios were not compatible. The lack of this crucial information contributed to the death of hundreds of New York City's finest and bravest.

Another well documented problem was that the radios simply did not work in the towers because of their height and because they lacked the needed repeaters.

The problems of September 11 were not without precedent. In 1993, when the World Trade Center wa the site of another terrorist attack, the fire department's radios did not work in the towers, and there was not interoperability between all emergency personnel. Thankfully, during that attack, these failures did not result in the loss of life of our emergency personnel, but failure to act on the lessons that were learned clearly led to deadly consequences on September 11th.

In the 2 years since September 11th, there has been a lot of discussion regarding interoperability and efforts to have specific spectrum dedicated for public safety. But despite all of this discussion and billions of dollars spent on homeland security funding, including some grants for interoperable communications, there is still one simple truth that sadly exists in New York City: the radios that did not work on September 11th still do not work today.

My sincere hope is that this hearing will shed further light on progress being made to further enhance interoperability of communication for our emergency personnel and to gain further information on what we have to do in New York to get this technology up and working for first responders to avoid another disaster. We must learn from history; we do not need any more examples as to why investing in this technology is so important, and the examples I gave really cite why, Mr. Chairman, the hearing that you are having today is tremendously important to the safety of our citizens.

Thank you.

[The prepared statement of Hon. Carolyn B. Maloney follows:]

Joint Subcommittee Hearing
"Public Safety Interoperability: Can You Hear Me Now?"
10:00 a.m., Room 2154 Rayburn House Office Building
November 6, 2003

Statement of Congresswoman Carolyn B. Maloney

As Chair of the Democratic Caucus's Task Force on Homeland Security and as a Member who represents New York City, homeland security is an issue I care deeply about.

The safety and security of our homeland is something we can all agree on – it is truly a bipartisan issue. Because we are all advocates of tough homeland security, we should all celebrate our successes and work together to fix vulnerabilities.

One of our greatest vulnerabilities is the lack of interoperability of communication for our nation's first responders.

One of the saddest lessons that we all learned during the terrorist attacks of September 11, 2001, was the importance of all emergency personnel to communicate with each other. On that terrible day, the New York City Police Department had a helicopter in the air around the towers and could see the North Tower glowing red and radioed their officers to warn them of a collapse, allowing most of their officers exit safely. At the same time numerous firefighters who were in the building could not hear the announcement to leave because their radios were not compatible. The lack of this crucial information contributed to the death of hundreds of New York's Bravest.

Another well documented problem was that the radios simply did not work in the Towers because of their height and they lacked the needed repeaters.

The problems of September 11th were not without precedent. In 1993, when the World Trade Center was the site of another terrorist attack, the fire department's radios did not work in the Towers and there was not interoperability between all emergency personnel. Thankfully during that attack, these failures did not result in a loss of life of our emergency personnel. But failure to act on the lessons that were learned clearly led to deadly consequences.

In the two years since September 11th, there has been a lot of discussion regarding interoperability and efforts to have specific Spectrum dedicated for public safety, but despite all of this discussion and Billions of dollars spent on homeland security funding, including some grants for interoperable communications, there is still one simple truth that exists in New York City – the radios that did not work on September 11th 2001 **still** do not work today. Let me repeat, they still do not work and there is no interoperability among public safety personnel.

My sincere hope is that this hearing will shed further light on progress being made to further enhance interoperability of communication for our emergency personnel and to gain further information on what we have to do in New York to get this technology up and working for our first responders to avoid another disaster. We must learn from history. We do not need any more examples as to why investing in this technology is so important.

Mr. PUTNAM. Thank you, Mrs. Maloney. You and your colleagues from New York have some very powerful lessons to share with us, some very tragic examples, unfortunately.

The gentleman from Maryland, Mr. Ruppersberger.

Mr. RUPPERSBERGER. And I agree with you, Mr. Chairman. A lot of the Members sitting here have been very active in first responders. Mrs. Maloney, I know you have been there and representing New York, and I know that Chairman Shays has really taken a lot of interest. So this is very important to us, this hearing; it is important to our local communities and our country.

Also, I want to acknowledge Jane Harman, who is the ranking member of Intelligence. I am on the Intelligence Committee. She is a fine leader and it shows how much she cares about her job to be here. She is not a member of this committee, but she is here today. You can belong everywhere, I guess. Was that a slip? I am trying to be nice.

We all know this is an incredibly important subject matter. We can create all the plans and have all the grants, but if our local first responders are not able to communicate, we are not going to be able to do the job.

This issue goes beyond just first responders needing compatible equipment. The Government also has the responsibility to set aside spectrum to allow that communication occur, and that is very relevant to today's discussion. If we decide to access commercial spectrum, will it be dedicated only during a crisis or all of the time? These are issues we have to look at. What licensing agreements are needed between State and local authorities? How do we protect communication from this disruption? Can others pick up, jam, or even send messages during a crisis? This can be an issue involving terrorism. These are things that we have to look at.

We have two panels here today. I do want to take a point of personal privilege. Councilwoman Marilyn Praisner and I have worked with for at least the last 10 years in local government, both on the board of the Maryland Association of Counties, of which she is president, but also on the National Association of Counties. She has been very active and has worked very hard on this issue, and I am glad to see that you are here representing the State of Maryland, Montgomery County. Thank you, Mr. Chairman.

Mr. PUTNAM. Thank you.

We would also like to welcome to this hearing the gentleman from Pennsylvania, Mr. Murphy, and the gentleman from Tennessee, Mr. Duncan, both of whom have agreed to submit their statements for the record.

Seeing no further statements, in keeping with the title of the Subcommittee on Technology, I remind you that today's hearing, and nearly all of our hearings, can be viewed live via Webcast on the committee's Web site, reform.house.gov under live committee broadcast link.

At this time we will go to the testimony of our first panel. Before doing so, I would ask that panel one please stand and raise your right hands for the administration of the oath.

[Witnesses sworn.]

Mr. PUTNAM. Note for the record that all five witnesses and those accompanying them responded in the affirmative. And we will

begin with Dr. Jenkins. Dr. William Jenkins is the Director of Homeland Security and Justice Issues for the U.S. General Accounting Office. Dr. Jenkins has been with the GAO since 1979, having worked principally in areas of budget policy, defense, financial markets, and justice administration. He has also been an adjunct professor at American University for over a decade. Dr. Jenkins is a graduate of Rice and received his Ph.D. in public law from the University of Wisconsin at Madison.

We welcome you for your testimony, and you are recognized for 5 minutes.

Noting the size of the panel and the size of the interests shown by subcommittee members, we would ask that you adhere to our 5 minute rule, please.

You are recognized.

STATEMENTS OF WILLIAM O. JENKINS, JR., DIRECTOR, HOMELAND SECURITY AND JUSTICE ISSUES, U.S. GENERAL ACCOUNTING OFFICE; MARILYN WARD, CHAIRMAN, NATIONAL PUBLIC SAFETY TELECOMMUNICATIONS COUNCIL [NPSTC], MANAGER, PUBLIC SAFETY COMMUNICATIONS DIVISION, ORANGE COUNTY, FL; ALDONA VALICENTI, NATIONAL ASSOCIATION OF STATE CHIEF INFORMATION OFFICERS, NASCIO MEMBER TO PSWN/SAFECOM, CHIEF INFORMATION OFFICER, STATE OF KENTUCKY; MARILYN PRAISNER, COUNCILWOMAN, MONTGOMERY COUNTY, MD, CHAIR, TELECOMMUNITY, CHAIR, TECHNOLOGY COMMITTEE, NATIONAL ASSOCIATION OF COUNTIES, PSWN EXECUTIVE BOARD, CAPWIN EXECUTIVE BOARD; AND GEORGE AKE, PROGRAM DIRECTOR, CAPITAL WIRELESS INTEGRATED NETWORK [CAPWIN]

Dr. JENKINS. Chairman Putnam, Chairman Shays, members of the subcommittee, I appreciate the opportunity today to discuss the critical issue of interoperable communications for first responders. The interoperability issues the Nation faces today did not arise overnight, and they will not be successfully resolved over night. This morning I wish to discuss three challenges that must be met if we are to successfully address the complex issue of establishing effective and reliable interoperable communications, and one major barrier to successfully meeting those three challenges.

The first challenge is to clearly define the problem, an obvious but not easy task. It is important to recognize that interoperable communications is not an end in itself, but one means to a very important end: the ability to respond effectively to any event that requires the coordinated actions of first responders.

Moreover, interoperable communications is but one component of an effective incident command planning and operation structure, one that uses different scenarios—a car accident, a natural disaster, a major terrorist attack—to identify who is in charge, who must be able to communicate what information, to whom, in what form, under what circumstances. For example, what are the similarities and differences in the interoperable communication capacities, protocols, and first responder participants associated with responding to seasonably predicted flooding or a terrorist attack that involves biological agents.

Only after this analysis has been done is it possible to assess the most appropriate means of achieving effective, reliable interoperable communications. It is also important to recognize that interoperable communications is not a static issue, but one that must be periodically reassessed in light of technology changes and changing events for which first responders must be prepared.

Once the problem has been defined, the second challenge is to develop national performance goals and technical standards that balance uniformity with the need for flexibility in adapting them to different State and regional needs and circumstances. Because the events for which first responders must be prepared varies across the Nation, there is no single silver bullet solution that will meet all needs Nation-wide.

The Council on Foreign Relations' report on emergency responders and SAFECOM officials have noted that we currently have no national standards, guidance, or strategy for achieving effective, reliable interoperable communications for first responders. DOJ officials told us they are working with SAFECOM to develop a statement of requirements for interoperable communications by May 2004.

The third challenge is defining the roles and responsibilities of Federal, State, and local governments in addressing the interoperability problem. This includes their role in defining the problem, implementing any national performance goals and standards, and assessing alternative needs in achieving those goals and standards.

In October 2002, this full committee issued a report on the Nation's preparation for biological, chemical, or nuclear attack. Its first finding was that incompatible communication systems impede intergovernmental coordination efforts, and recommended that the Federal Government take a leadership role in resolving the problem.

A variety of Federal agencies and programs have been and remain involved in defining the interoperability problem and identifying potential solutions. OMB has designated SAFECOM as the means of unifying Federal efforts to coordinate the work of Federal, State, local, and tribal governments to provide reliable interoperable communications. However, SAFECOM does not include all major Federal efforts in this area, and its relationship to other Federal agencies and programs such as the Justice Department's AGILE program, is still evolving.

SAFECOM will also face complex issues in addressing public safety spectrum management and coordination. Responsibility for assigning spectrum is split between the Federal Communications Commission and the National Telecommunications and Information Agency in the Department of Commerce. In September 2002 we reported these two agencies did not share a clearly defined national spectrum strategy, and we recommended that they develop such a strategy and report the result to Congress. To date, they have not done so.

State roles are also evolving, with several States such as Missouri and Washington establishing a foundation for State-wide planning and multi-State cooperation through memoranda of understanding or similar agreements. Within States there is a grow-

ing recognition that effective emergency response, including effective interoperable communications, requires a regional approach.

The barriers to achieving effective interoperable communications are generally well known. They include incompatible and aging communications equipment, limited and fragmented funding, limited and fragmented radio spectrum, limited equipment standards, and limited and fragmented planning and cooperation. Of these, perhaps the most fundamental is the lack of effective interdisciplinary and intergovernmental planning and cooperation.

No one Federal first responder group, jurisdiction, or level of government can successfully fix the interoperability problems that face this Nation. Police and fire departments are often at war over how to run incident command centers. They also often use different terminology to describe the same thing. The absence of a common language in operating procedures can lead to communications problems even when participating first responders share common communications equipment and spectrum.

Success will require the partnership, leadership, and collaboration of everyone involved. In the absence of that partnership and collaboration, we risk spending funds ineffectively and creating new problems in our attempt to resolve existing ones.

That concludes my statement, Mr. Chairman. I would be pleased to answer any questions you or other members of the subcommittee may have.

[The prepared statement of Dr. Jenkins follows:]

United States General Accounting Office

GAO

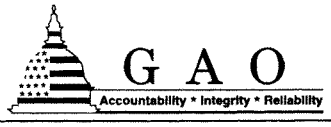
Testimony
Before the Subcommittees of the Government Reform Committee, House of Representatives

For Release on Delivery
Expected at 10:00 a.m. EST
Thursday, November 6, 2003

HOMELAND SECURITY

Challenges in Achieving Interoperable Communications for First Responders

Statement of William O. Jenkins, Jr.
Director, Homeland Security and Justice Issues



GAO-04-231T

Messrs. Chairmen and Members of the Subcommittees:

I appreciate the opportunity to be here today to discuss the critical issue of wireless interoperable communications for first responders. The inability of first responders—police officers, fire fighters, emergency medical service personnel, public health officials, and others—to communicate effectively with one another as needed during an emergency is a long-standing and widely recognized problem in many areas across the country. Reports have shown that when first responders cannot communicate effectively as needed, it can literally cost lives—of both emergency responders and those they are trying to assist. Thus, effective interoperable communications between and among wireless communications systems used by federal, state, and local public safety agencies is generally accepted as not only desirable but essential for the protection of life and property. The effective interoperability of these wireless systems permits a rapid and coordinated response to an emergency incident, whether that incident is a "routine" spill from an overturned tanker truck or railcar, a natural disaster, or a terrorist attack.

At the request of the Chairman of the full committee, we are examining the barriers to improved interoperability and the roles that federal, state, and local governments can play in improving wireless interoperability communications.[1] Our work is ongoing. To date, we have contacted state and local officials in several states, attended professional meetings, and opened discussion with the Department of Homeland Security (DHS) and other key federal agencies. We are conducting our work in accordance with generally accepted government auditing standards. My testimony today focuses on the broad and complex nature of the interoperability issue and the challenges the nation faces in addressing this issue.

Background

Interoperability problems existed among public safety agencies for many years prior to the September 11 attacks on the Pentagon and New York City. Reports on incidents have documented a number of problems in public safety wireless communications. For example, the National Task Force on Interoperability (NTFI) documented interoperability problems in

[1]Our work addresses public safety wireless communications interoperability issues. Thus, we do not address interoperability problems found in other homeland security functions, such as fire equipment, chem-bio equipment, and information technology.

several states - including South Dakota, Indiana, and Minnesota–that had developed over a number of years.[2]

For over 15 years the federal government has been concerned about public safety spectrum issues, including communications interoperability issues. A variety of federal agencies have been involved in defining the problem and identifying potential solutions. In addition, Congress has taken several actions over the past two decades to address the availability and use of the public safety wireless spectrum.

The events of September 11, 2001, have resulted in greater public and governmental focus on the role of first responders and their capacity to respond to emergencies, including those resulting from terrorist incidents. One result has been significantly increased federal funding for state and local first responders, including funding to improve interoperable communications among federal, state, and local first responders. In fiscal year 2003 , Congress appropriated at least $154 million for interoperability through a variety of grants administered by the Department of Homeland Security, the Department of Justice, and other agencies.

In addition to appropriating more funds, the executive branch and Congress have attempted to consolidate federal efforts and coordinate federal grant programs. Within the executive branch, the Office of Management and Budget in 2001 created the Wireless Public SAFEty Interoperable COMmunications Program, or SAFECOM, [3] to unify the federal government's efforts to help coordinate the work at the federal, state, local and tribal levels, in order to provide reliable public safety communications and achieve national wireless communications interoperability.[4]

[2]National Task Force on Interoperability, WHY CAN'T WE TALK? Working Together To Bridge the Communications Gap To Save Lives, February, 2003.

[3]SAFECOM is one of the President's 24 E-GOV initiatives.

[4]The description of SAFECOM's mission is taken from the Administrator for E-government and IT, the Office of Management and Budget letter to the attendees of the SAFECOM, National Institute of Standards and Technology and National Institute of Justice Summit on Interoperable Communications For Public Safety.

Summary

The interoperability issues that the nation faces today did not arise overnight and they will not be successfully addressed overnight. Federal, state, and local governments face several major challenges in addressing interoperability in their wireless communications. The first challenge is to clearly identify and define the problem, recognizing that interoperable communications is but a means to an end–the ability to respond effectively to any incident that requires the coordinated actions of first responders. The second is whether and how to establish national interoperability performance goals and standards and to balance them with the flexibility needed to address differences in state, regional, and local needs and conditions. The third challenge is defining the roles of federal, state, and local governments and other entities in identifying the communication problem, implementing any national performance goals and standards, and assessing alternative means of achieving those goals and standards. The fundamental barrier to successfully addressing these challenges has been the lack of effective, collaborative, interdisciplinary and intergovernmental planning. No one first responder group or governmental agency can successfully "fix" the interoperability problems that face our nation. It will require the partnership, leadership, and coordinated planning of everyone involved .

The First Challenge: Identifying and Defining the Interoperability Problem

In discussing the issue of interoperable communications, it is important to recognize that interoperable communications is not merely a technological issue or an end in itself. It is rather a key means of achieving a desirable objective—the effective response to and mitigation of events or incidents that require the coordinated actions of emergency responders. These events could encompass a wide range of possibilities, such as multi-vehicle accidents, major floods or wildfires, or a terrorist attack that involved thousands of injuries.

Interoperable communications is also but one component, although an important one, of an effective incident command planning and operations structure. As a standard practice, public safety agencies are to establish communications capabilities to support command and control of their operations at an incident scene. Determining the most appropriate means of achieving interoperable communications must flow from an effective planning and operations structure that identifies who is in charge and who must be able to communicate what information to whom under what circumstances. For example, there are likely to be both similarities and differences in the interoperable communications capacities, protocols, and participants associated with responding to seasonally predictable wildfires and terrorist attacks that involve biological agents.

Defining the range of interoperability capacity needed requires identifying the types of events for which interoperable communications would be needed, the participants involved in responding to those events—by professional discipline and jurisdiction—and an operational definition of who is charge and who would need to communicate what types of information (e.g., voice, data, or both) with whom under what circumstances. These are not easy tasks, and they require both a multi-disciplinary and multi-jurisdictional perspective. But these tasks are a precursor to assessing the current problems—e.g., operational, technical, and fiscal—that exist in meeting interoperable communication needs and alternative means of achieving identified interoperable communications needs.

But more importantly, interoperability is not a static issue–it is an issue that is affected by changes in technology and the changing events and threats for which first responders must be prepared. Thus, there is no single, long-term solution; the issue is one that must be periodically reassessed as needs and technology change.

Interoperability Is Not a Static Issue

The issues and problems in defining and scoping what is meant by "interoperability" are not static. They evolve over time in a fluid and ever-changing environment of evolving threats and events for which we need to be prepared to respond, new operational requirements, new spectrum bands for public safety use, and new technology.

The Evolving Definition of First Responders

Public safety officials generally recognize that interoperable communications is the ability to talk with whom they want, when they want, when authorized, but not the ability to talk with everyone all of the time. However, there is no standard definition of communications interoperability. Nor is there a "one size fits all" requirement for who needs to talk to whom.

Traditionally, first responders have been considered to be fire, police and emergency medical service personnel. However, in a description of public safety challenges, a federal official noted that the attacks of September 11, 2001, have blurred the lines between public safety and national security. According to the Commission, effective preparedness for combating terrorism at the local level requires a network that includes public health departments, hospitals and other medical providers, and offices of

emergency management, in addition to the traditional police, fire, and emergency medical services first responders.[5] Furthermore, Congress recognized the expanded definition of first responder in the Homeland Security Act of 2002, which defined "emergency response providers" as "Federal, State, and local emergency public safety, law enforcement, emergency response, emergency medical (including hospital emergency facilities), and related personnel, agencies, and authorities."[6]

Reexamining the Jurisdictional Boundaries of Interoperability

The context of the communications also affects the definition of the problem. Two key studies in the late 1990s sponsored by the Department of Justice (DOJ) and the Public Safety Wireless Network (PSWN)[7] program provide a nationwide picture of wireless interoperability issues among federal, state, and local police, fire, and emergency medical service agencies at that time.[8] Both studies describe most local public safety agencies as interacting with other local agencies on a daily or weekly basis. As a result, most local agencies had more confidence in establishing radio links with one another than with state agencies, with whom they less frequently interact. Local public safety agencies interact with federal agencies least of all, with a smaller percentage of local agencies expressing confidence in their ability to establish radio links with federal agencies. The events of September 11, 2001, have resulted in a reexamination of the circumstances in which interoperable communications should extend across political jurisdictions and levels of government.

Interoperable Needs Are Scenario Driven and Change Over Time

Another issue is the broad range of scenarios in which interoperable communications are required. Public safety officials have pointed out that interoperability is situation specific, based on whether communications are needed for (1) "mutual-aid responses" or routine day-to-day

[5]Third Annual Report to the President and the Congress of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, December 15, 2001.

[6]Homeland Security Act, P.L. 107-296, section 2 (6).

[7]The Department of Justice and the Department of the Treasury formed the Public Safety Wireless Network Program (PSWN) to promote effective public safety communications and to foster interoperability among local, state, federal, and tribal communications systems. PSWN was incorporated into the new Department of Homeland Security as part of the SAFECOM project in 2003.

[8]The DOJ study concentrated on wireless interoperability issues within the state and local law enforcement community, while the PSWN study assessed communications interoperability issues within the fire and emergency medical services communities.

coordination between two local agencies; (2) extended task force operations involving members of different agencies coming together to work on a common problem; or (3) a major event that requires response from a variety of local, state, and federal agencies. One official breaks the major event category into three separate types of events:

- planned events, such as the Olympics, for which plans can be made in advance;
- recurring events, such as major wildfires and hurricanes, that can be expected every year and for which contingency plans can be prepared based on past experience, and
- unplanned events, such as the September 11th attacks, that can rapidly overwhelm the ability of local forces to handle the problem.

Technological Changes Also Affect Interoperability

As technology changes, it presents new problems and opportunities for achieving and maintaining effective interoperable communications. According to one official, in the 1980s, a method of voice transmission called "trunking" became available that allowed more efficient use of spectrum. However, three different and incompatible trunking technologies developed, and these systems are not interoperable. This official noted that as mobile data communications becomes more prevalent and new digital technologies are introduced, standards become more important.

Technical standards for interoperable communications are still under development. Beginning in 1989, a partnership between industry and the public safety user community developed what is known as Project 25 (P-25) standards. According to the PSWN program office, Project 25 standards remain the only user-defined set of standards in the United States for public safety communications. The Department of Homeland Security has recently decided to purchase radios that incorporate the P-25 standards for the each of the nation's 28 urban search and rescue teams. PSWN believes P-25 is an important step toward achieving interoperability, but the standards do not mandate interoperability among all manufacturers' systems. Standards development continues today as new technologies emerge that meet changing user needs and new policy requirements.

In addition, new public safety mission requirements for video, imaging, and high speed data transfers, new and highly complex digital

communications systems, and the use of commercial wireless systems, are potential sources of new interoperability problems.

Availability of new spectrum can also result in new technologies and require further development of technical standards. For example, the FCC recently designated a new band of spectrum, the 4.9 Gigahertz (GHz) band, for public safety uses and sought comments on various issues, including licensing and service rules. The FCC provided this additional spectrum to public safety users to support new broadband applications, such as high-speed digital technologies and wireless local area networks for incident scene management. The Federal Communications (FCC) in particular requested comments on the implementation of technical standards for fixed and mobile operations on the band. The National Public Safety Telecommunications Council[9] has established a task force that includes work on interoperability standards for the 4.9 GHz band.

Second Challenge: Establishing National Goals and Requirements

When the interoperability problem has been sufficiently defined and bounded, the next challenge will be to develop national interoperability performance goals and technical standards that balance consistency with the need for flexibility in adapting them to state and regional needs and circumstances.

Lack of National Requirements

One key barrier to development of a national interoperability strategy is the lack of a statement of national mission requirements for public safety—what set of communications capabilities should be built or acquired—and a strategy to get there. The report of the Independent Task Force sponsored by the Council on Foreign Relations on emergency responders said national standards of preparedness have not been defined and that the lack of a methodology to determine national requirements for emergency preparedness constitutes a national crisis.[10] The report

[9]Formed May 1, 1977, the National Public Safety Telecommunications Council is a federation representing public safety telecommunications. The purpose of NPSTC is to follow up on the recommendations of the Public Safety Wireless Advisory Committee (PSWAC). In addition, NPSTC acts as a resource and advocate for public safety telecommunications issues.

[10]Independent Task Force Sponsored by the Council on Foreign Relations; Emergency Responders: Drastically Underfunded, Dangerously Unprepared.

recommended these standards be prepared for federal, state, and local emergency responders in such areas as training, interoperable communications systems, and response equipment. SAFECOM officials have noted that no standard, guidance, or national strategy exists on interoperability. DOJ officials told us they are working with SAFECOM to develop a statement of requirements that should be ready for release by May 1, 2004.

Need for an Interoperability Blueprint

To guide the creation of interoperable communications, there must be an explicit and commonly understood and agreed-to blueprint, or architecture, for effectively and efficiently guiding modernization efforts. For a decade, GAO has promoted the use of architectures, recognizing them as a crucial means to a challenging goal: agency operational structures that are optimally defined in both business and technological environments. An enterprise architecture provides a clear and comprehensive picture of an entity, whether it is an organization (e.g., a federal department or agency) or a functional or mission area that cuts across more than one organization (e.g., financial management). In August 2003, DHS released its initial enterprise architecture that it described as conceptual in nature.. We are in the process of reviewing this architecture at the request of the Chairman, Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census, Committee on Government Reform.

Need For Flexibility

There is no single "silver bullet" solution to interoperability needs. Our ongoing work indicates that communications interoperability problems facing any given locality or state tend to be situation specific, with no universally applicable solution. For example, the Association of Public Safety Communications Officials (APCO) noted in its White Paper on Homeland Security that various methods are possible to achieve interoperability but planning is an essential first step to choosing a solution. APCO noted that interoperability does not involve a single product or system approach; rather it is accomplished with a variety of solutions with a focus on the first responder. APCO noted that what is an appropriate interoperability solution varies with the operation of the

particular government agencies, their funding, their physical location, and other individual circumstances.[11]

In addition, the Public Safety Wireless Advisory Committee's (PSWAC) final report noted that the public safety community has some common operational requirements, such as dispatch communications and transmission of operational and tactical instructions. However, the PSWAC report also describes agencies' specialized requirements that are based on specific missions and operating environments. For example, the report notes forestry and state police have long distance requirements where foliage can be a problem for higher frequency systems. In contrast, a metropolitan police department may need highly reliable in-building coverage, which is not a requirement for state police mobile operations. Those state and local officials we have interviewed to date have stated that they want to retain flexibility when addressing communications issues. For example, Virginia state officials noted that geographical locations within the state present different interoperability requirements. They said interoperability problems differ from locality to locality, and that solutions must be developed that fit the specific circumstances of the individual geography and situation.

Third Challenge: Need to Define Intergovernmental Roles

As noted above, the federal government has a long history in addressing federal, state, and local government public safety issues–in particular interoperability issues. The Government Reform Committee has also recently contributed to the development of policies. In October 2002 the Committee issued a report entitled "How Can the Federal Government Better Assist State and Local Governments in Preparing for a Biological, Chemical, or Nuclear Attack "(Report 107-766). The Committee's first finding was that incompatible communication systems impede intergovernmental coordination efforts. The Committee recommended that the federal government take a leadership role in resolving the communications interoperability problem.

Federal Efforts to Establish A Leadership Role

The federal role in addressing the interoperability of public safety wireless communications continues to evolve. Today, a combination of many federal agencies, programs, and associations are involved in coordinating

[11]The Association of Public-Safety Communications Officials, The APCO International Homeland Security White Paper, August 2002.

emergency communications. In June 2003, SAFECOM partnered with the National Institute of Standards and Technology (NIST) and the National Institute of Justice (NIJ) to hold a summit that brought together over 60 entities involved with communications interoperability policy setting or programs. According to NIST, the summit familiarized key interoperability players with work being done by others and provided insight into where additional federal resources may be needed.

The SAFECOM program was initially established within Justice in 2001 and was transferred to the Federal Emergency Management Agency (FEMA) in 2002 before being brought into DHS in early 2003. The current director said his program is responsible for outreach to local, state, and federal public safety agencies to assist in interoperability planning and implementation. In an August 2003 briefing, SAFECOM stated its role is to serve "as the umbrella program within the federal government to coordinate the efforts of local, tribal, state and federal public safety agencies working to improve public safety response through more effective, efficient, interoperable wireless communications." In the briefing, SAFECOM officials said they have begun to implement this coordination role by setting objectives to develop a national public safety communications strategy, providing supporting standards and guidance; developing funding mechanisms and guidance, and creating a national training and technical assistance program.

SAFECOM officials have also stated that SAFECOM has taken several other actions to implement its role as the umbrella program to coordinate actions of the federal government. For example, in coordination with officials of other agencies, it developed guidance for federal grants supporting public safety communications and interoperability. The guidance is designed to provide an outline of who is eligible for the grants, purposes for which grant funds can be used and eligibility specifications for applicants. The guidance requires that, at a minimum, applicants must" define the objectives of what the applicant is ultimately trying to accomplish and how the proposed project would fit into an overall effort to increase interoperability, as well as identify potential partnerships for agreements." Additionally, the guidance recommends, but does not require, that applicants establish a governance group consisting of local, tribal, state, and federal entities from relevant public safety disciplines and purchase interoperable equipment that is compliant with phase one of Project-25 standards.

Although SAFECOM is the umbrella program to coordinate actions of the federal government, it does not include all major federal efforts aimed at

promoting wireless interoperability for first responders. Specifically, the Justice Department continues to play a major role in interoperability after the establishment of DHS. Key Justice programs–the Advanced Generation of Interoperability for Law Enforcement (AGILE) and the Community Oriented Policing Services–did not transition to the SAFECOM program in the new Department of Homeland Security. AGILE is the Department of Justice program to assist state and local law enforcement agencies to effectively and efficiently communicate with one another across agency and jurisdictional boundaries. It is dedicated to studying interoperability options and advising state and local law enforcement, fire fighters, and emergency technicians. The SAFECOM program director also said most of the federal research and development on prototypes is being conducted within the AGILE program. The Department of Justice said it is also creating a database for all federal grants to provide a single source of information for states and localities to access, and to allow federal agencies to coordinate federal funding awards to state and local agencies. SAFECOM and AGILE officials told us they have an informal, but close working relationship today, and that they are negotiating a memorandum of understanding between the two programs. Federal officials also told us that efforts are also under way by SAFECOM, AGILE, and other federal agencies to coordinate work on technical assistance to state and local governments and to develop and set interoperability standards. The SAFECOM program may continue to face challenges in assuming a leadership role for the federal government while these significant Justice programs remain outside its domain.

SAFECOM officials will face complex issues when they address public safety spectrum management and coordination. The National Governors' Guide to Emergency Management noted that extensive coordination will be required between the FCC and the National Telecomunications and Information Agency (NTIA) to provide adequate spectrum and to enhance shared local, state, and federal communications. However, the current legal framework for domestic spectrum management is divided between the NTIA within the Department of Commerce, which regulates federal government spectrum use, and the Federal Communications Commission, which regulates state, local, and other nonfederal spectrum use. In a September 2002 report on spectrum management and coordination, GAO found that FCC's and NTIA's efforts to manage their respective areas of responsibility were not guided by a national spectrum strategy.[12] The FCC

[12]TELECOMMUNICATIONS; Better Coordination and Enhanced Accountability Needed to Improve Spectrum Management, GAO-02-906, September, 2002

and the NTIA have conducted independent spectrum planning efforts and have recently taken steps to improve coordination, but they have not yet implemented long-standing congressional directives to conduct joint, national spectrum planning. We recommended that the FCC and the NTIA develop a strategy for establishing a clearly defined national spectrum plan and submit a report to the appropriate congressional committees. In a January 2003 report, we discussed several barriers to reforming spectrum management in the United States.[13]

State Role in Interoperability Issues Is Evolving

The role that state and local governments will play in public safety communications is evolving. This role is being defined by states and local governments as they address problems they recognize exist in their communications systems and by the FCC and the NTIA. As noted by the National Governors Association (NGA), many states are establishing a foundation for cooperation and statewide planning through memorandums of understanding or similar agreements.

Several states have or are taking executive and legislative actions to address communications planning and interoperability planning. For example, the Missouri State Interoperability Executive Committee was created by the Missouri Department of Public Safety to enhance communications interoperability among public safety entities in Missouri by promoting available tools and relationships. The Missouri State Interoperability Executive Committee established a Memorandum of Understanding (MOU) that instructs public safety agencies within the state to use the FCC designated interoperability channels under an Incident Command/Incident Management structure. The MOU also attempts to diminish operational interoperability barriers by creating common operating procedures for the agencies to use on the channels. Furthermore, in order to create a comprehensive approach to interoperability that addresses new homeland security concerns, the State of Missouri enacted the "Missouri Uniform Communications Act for Homeland Security", which established the State's "Public Safety Communications Committee." This Committee is composed of representatives from the Department of Public Safety, Office of Homeland Security, Department of Conservation and Department of Transportation. The committee reviews all public safety agencies' plans that request state or federal wireless communications funds and relies on the

[13]TELECOMMUNICATIONS; Comprehensive Review of U.S. Spectrum Management With Broad Stakeholder Involvement Is Needed,GAO-03-277, January, 2003

recommendations of the Missouri Interoperability Executive Committee to ensure that state decisions enhance interoperability.

Another state that uses the State Interoperability Executive Committee structure to enhance communications interoperability is the State of Washington, whose committee was established by state legislation effective July 1, 2003. The Washington Committee was created under the Information Services Board within the Department of Information Services. The Committee's members include representatives from the Military, Transportation, Information Services and Natural Resources departments; the Washington State Patrol; state and local fire chiefs; police chiefs; sheriffs; and state and local emergency managers. Washington legislation requires the Committee to submit to the State legislature an inventory of all public safety systems within the state and a plan to ensure the interoperability of those systems. The Committee was given the authority to develop policies and procedures for emergency communications systems across the state and to serve as the point of contact for the FCC in the allocation, use and licensing of radio spectrum for public safety and emergency communication systems.

Federal actions to support state efforts that address wireless interoperability issues are still evolving. On the one hand, the Public Safety Wireless Network program has supported state efforts to improve multistate and individual statewide planning and coordination through a number of projects that emphasize a regional approach. However, two agencies of the federal government–the FCC and the NTIA–set rules and regulations for state and local governments and federal government wireless systems respectively.

The Regional or Shared Approach

State and local efforts to address interoperability issues are widespread. The National Governors Association said in its recent Guide to Emergency Management that interoperable equipment, procedures, and standards for emergency responders are key to improving the effectiveness of mutual aid agreements with other states and other jurisdictions. The NGA guide calls for governors and their state homeland security directors to:

- develop a statewide vision for interoperable communications;
- ensure adequate wireless spectrum is available to accommodate all users;
- invest in new communications infrastructure;

- develop standards for technology and equipment, and partner with government and private industry.

Specifically, states are taking action to facilitate strategic planning and interoperability planning that emphasize a shared approach at the multistate, state, and local levels. The Public Safety Wireless Network report notes that although in the past public safety agencies have addressed interoperability on an individual basis, more recently, local, state, and federal agencies have come to realize that they cannot do it alone. The report also notes that officials at all levels of government are now taking action to improve coordination and facilitate multi-jurisdictional interoperability. We talked to officials from several states about their states' efforts to address interoperability issues on a regional basis. For example;

- State officials from Kentucky, Indiana, Illinois, Ohio, and Michigan have combined efforts to form a Mid-west Consortium to promote interstate interoperability. They have taken actions to form an interstate committee to develop interoperability plans and solicit support from key players such as local public safety agencies. The governors of the states have agreed to sign an MOU to signify that each state is willing to be interoperable with the other states and will provide communication assistance and resources to the other states, to the extent that it does not harm their own state.

- In Florida, the governor of the state issued an executive order in 2001 to establish seven Regional Domestic Security Task Forces that make up the entire state. Each of the regional task forces has a committee on interoperable communications under Florida's Executive Interoperable Technologies Committee. The Florida legislature supported that effort by establishing the Task Forces in law and formally designating the Florida Department of Law Enforcement and the Division of Emergency Management as the lead agencies. The Task Forces consist of agencies from Fire/Rescue, Emergency Management, and public health and hospitals, as well as law enforcement. In addition, it includes partnerships with education/schools, business and private industry.

Statewide Interoperability Plans

Public safety representatives have stressed the importance of planning in addressing communications interoperability issues. The Association of Public Safety Communications Officials (APCO) has emphasized the importance of planning in addressing communications interoperability problems. In its Homeland Security white paper, APCO said that a plan for responding to terrorist events should include a section on how to address interoperability requirements. The creation of state interoperability plans

could help reduce the current fragmented public safety communications planning process. Public safety agencies have historically planned and acquired communications systems for their own jurisdictions without concern for interoperability. This meant that each local and state agency developed communications systems to meet their own requirements, without regard to interoperability requirements to talk to adjacent jurisdictions. For example, a PSWN anlaysis of Fire and EMS communications interoperability found a significant need for coordinated approaches, relationship building, and information sharing. However, the PSWN program office found that public safety agencies have traditionally developed or updated their radio systems independently to meet specific mission needs. Each agency developed a sense of "ownership", leading to "turf issues" and resistance to change.

The SAFECOM program has reached similar conclusions. According to SAFECOM, the priorities of local and state public safety communications systems are first, to provide reliable agency specific communications; second, to provide local interagency communications; and third, to provide reliable interagency local/state/federal communications. In a August 11, 2003, briefing document, SAFECOM noted that limited and fragmented planning and cooperation was one barrier to public safety wireless communications. SAFECOM noted a complex environment of over 2.5 million public safety first responders within more than 44,000 agencies and the fragmented command structure–where each Chief of Police sees himself as the Chairman of the Joint Staff in his jurisdiction–but the Fire Chief disagrees. The briefing also noted that a multitude of federal programs provide funding for interoperable communications with no coordination of requirements or guidance and that local funding was also stove-piped to meet individual agency needs. In a recent statement, we identified 10 separate grant programs that could be used for first responder equipment, including a number of these that can be used for interoperable communications equipment. We stated that the fragmented delivery of federal assistance can complicate coordination and integration of services and planning at state and local levels.[14]

[14]Homeland Security: Reforming Federal Grants to Better Meet Outstanding Needs, GAO-03-1146T, September 3, 2003

The Fundamental Barrier to Success: The Absence of Effective Coordinated Planning and Collaboration

The barriers to successfully addressing the three challenges we have outlined are multifaceted. Among the organizations we have contacted or whose reports we have reviewed, we found a variety of identified barriers, with a number of common barriers. For example, the SAFECOM project and a task force of 18 national associations representing state and local elected and appointed officials and public safety officials[15] identified similar barriers: (1) incompatible and aging communications equipment, (2) limited and fragmented funding, (3) limited and fragmented planning and cooperation, (4) limited and fragmented radio spectrum, and (5) limited equipment standards.

Of all these barriers, perhaps the most fundamental has been limited and fragmented planning and cooperation. The regional chairs of the Florida State Interoperability Committee have noted that non-technical barriers are the most important and difficult to solve. Police and fire departments often have different concepts and doctrines on how to operate an incident command post and use interoperable communications. Similarly, first responders, such as police and fire departments, may use different terminology to describe the same thing. Differences in terminology and operating procedures can lead to communications problems even where the participating public safety agencies share common communications equipment and spectrum.

No one first responder group, jurisdiction, or level of government can successfully address the challenges posed by the current state of interoperable communications. Effectively addressing these challenges requires the partnership, leadership, and collaboration of all first responder disciplines, jurisdictions, and levels of government—local, state, federal, and tribal. In the absence of that partnership and collaboration, we risk spending funds ineffectively and creating new problems in our attempt to resolve existing ones.

[15]National Task Force on Interoperability, WHY CAN'T WE TALK? Working Together To Bridge the Communications Gap To Save Lives, February, 2003.

That concludes my statement, Mr. Chairmen, and I would be pleased to answer any questions you or other members of the Subcommittees may have.

GAO's Mission

The General Accounting Office, the audit, evaluation and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through the Internet. GAO's Web site (www.gao.gov) contains abstracts and full-text files of current reports and testimony and an expanding archive of older products. The Web site features a search engine to help you locate documents using key words and phrases. You can print these documents in their entirety, including charts and other graphics.

Each day, GAO issues a list of newly released reports, testimony, and correspondence. GAO posts this list, known as "Today's Reports," on its Web site daily. The list contains links to the full-text document files. To have GAO e-mail this list to you every afternoon, go to www.gao.gov and select "Subscribe to e-mail alerts" under the "Order GAO Products" heading.

Order by Mail or Phone

The first copy of each printed report is free. Additional copies are $2 each. A check or money order should be made out to the Superintendent of Documents. GAO also accepts VISA and Mastercard. Orders for 100 or more copies mailed to a single address are discounted 25 percent. Orders should be sent to:

U.S. General Accounting Office
441 G Street NW, Room LM
Washington, D.C. 20548

To order by Phone:
Voice: (202) 512-6000
TDD: (202) 512-2537
Fax: (202) 512-6061

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Web site: www.gao.gov/fraudnet/fraudnet.htm
E-mail: fraudnet@gao.gov
Automated answering system: (800) 424-5454 or (202) 512-7470

Public Affairs

Jeff Nelligan, Managing Director, NelliganJ@gao.gov (202) 512-4800
U.S. General Accounting Office, 441 G Street NW, Room 7149
Washington, D.C. 20548

PRINTED ON RECYCLED PAPER

Mr. PUTNAM. Thank you very much.

Our next witness is Marilyn Ward. Ms. Ward joins us today as chairman of the National Public Safety Telecommunications Council. She began her career in public safety more than 30 years ago as a dispatcher for the Florida Highway Patrol. Twenty-seven years of her career were spent in Orlando, where she quickly rose to the position of Communications Division Commander. She currently is the manager of Public Safety Communications Division for Orange County, FL. In her current position, she chairs the Governor's Domestic Security Task Force Interoperability Committee and is a member of the SAFECOM Executive Committee.

Welcome.

Ms. WARD. Thank you very much for having me.

I am here today to talk with you about the National Public Safety Telecommunications Council [NPSTC]. NPSTC is an organization of 13 public safety type organizations, and we have 5 liaisons. Some of the initiatives that we have been working on to improve interoperability have been being worked on by all of these groups, and the IAFC, International Fire Chiefs, told me to be sure and mention them, that they are in support of these comments.

With over 44,000 public safety first responder organizations in the United States, it is crucial that we have a resource and an advocate for public safety telecommunications. That is the primary role of NPSTC. NPSTC is a federation of public safety associations that encourages and facilitates through a collective voice, the implementation of the Public Safety Wireless Advisory Committee and 700 Megahertz Public Safety National Coordination Committee recommendations.

NPSTC also serves as a standing forum for the exchange of ideas and information regarding public safety telecommunications. NPSTC has initiatives ranging from spectrum allocation to formation of rules and technology. Recently, we were asked by the staff at the FCC to assume an ongoing role of the National Coordination Committee. This committee was an advisory committee for interoperability spectrum in the 700 megahertz band. This role for NPSTC will ensure that as the interoperability channels are deployed, there will be a methodology to ensure interoperability and spectrum resources. It also continues to expand NPSTC's membership to include more manufacturers and ensure a forum for dialog between all levels of government.

NPSTC also has numerous task forces that are working on several projects. We are working to clear the TV broadcasters from TV channels 60 to 69 so that public safety can move into this critically needed spectrum. We are also trying to work with the FCC to remove the interference on our existing spectrum in the 800 megahertz band. This is a critical public safety issue, as today we have responders whose radios will not talk when they are in certain areas of their communities because the cellular provider in that area shares frequencies.

These items, plus the interoperability issues, are high on our agenda. In that 85 percent of all police departments nationwide have fewer than 25 sworn officers, it is clear that this issue is a difficult one to solve without your help. Today, radios purchased from different vendors cannot communicate. There is no mandatory

standard for radios; however, a voluntary ANSI standard called Project 25 is available. We encourage your support to make this standard mandatory nationwide.

In addition, the issue of who is in charge of radio spectrum and radio systems makes it very difficult to plan for multi-jurisdictional communications systems. Often referred to as the political factor of interoperability, this one requires that Congress place restrictions on Federal grant funds to require multi-jurisdictional interoperability and standard base solutions.

In Florida, our Governor appointed a domestic security task force immediately after September 11. Recently, our region in central Florida, which is comprised of nine counties, applied for a Federal COPS and Interoperability grant for mutual aid channels regionwide. It was due to this DSTF system being in place that we were able to bring 100 people together, agree on a solution, get a 25 percent cash match, and complete the grant in a 2-week period. We did receive the grant, and we did so because we applied together. We will have a Project 25 standard and we are building a multi-jurisdictional solution.

I tell you this to explain how critical it is for you to make interoperability standards and multi-jurisdictional systems mandatory in future grants. It can be done, but it requires funding and agreements to work together toward a regional type solution.

So what can Congress do to improve public safety communications? I have a few suggestions: assist in assuring that the 700 megahertz bands are cleared as soon as possible; encourage the FCC to resolve the 800 megahertz interference issues; require that Federal grant funding ensure that users have to build to a public safety standard; allow grant funding to develop new technology standards; encourage a national center for interoperability source guide to all the different interoperability funding and research studies for locals to access on the Web; develop a standard set of frequencies and standards of use in a disaster area, and provide clear implementation guidelines; allow grant funding for communications technician and operator training. All of the plans in the world won't work unless people know how to use the technology.

Also, as a member of the SAFECOM Executive Committee, I see this as an opportunity for SAFECOM to bring together all of the resources that have been out there in the Federal Government, and I would suggest that we support SAFECOM.

Thank you for allowing me to speak to this body. The public safety community is depending on your leadership to help us solve this problem.

Thank you, Mr. Chairman.

[The prepared statement of Ms. Ward follows:]

November 6, 2003

Congressional Record of Testimony to the
One Hundred Eighth Congress
Congress of the United States
House of Representatives
Committee on Government Reform

First Responder Interoperability: Can You Hear Me Now?

Marilyn Ward

Good morning Chairman Davis, Representative Waxman, and other members of the committee. My name is Marilyn Ward, and I am chair of the National Public Safety Telecommunications Council, (NPSTC), and Manager of the Public Safety Communications Division for Orange County Florida. As a Past President of the Association of Public Safety Communications Officials, (APCO); a past member of the National Task Force for Interoperability, (NTFI); and a current member of the SAFECOM Executive Committee; and with 32 years of public safety experience, I am here to speak to you today about the public safety community and interoperability challenges we face. My discussion will be regarding the initiatives of these organizations and the perspective of the manager of one of the largest public safety radio systems in the country. Our system in Orange County has over 16,000 user IDs and 13 different jurisdictions communicating on one system.

Let me begin by addressing the National Public Safety Telecommunications Council.

NPSTC was brought together in 1996 by public safety communications users to continue the works of the Federal Communications Commission's Public Safety Wireless Advisory Committee (PSWAC). During PSWAC, local, state, and federal users participated in a year-long discussion about public safety communications needs. We discovered that the future held new challenges and technology that would require our responders to be able to talk back and forth on a public safety devise, when and where they needed to talk. Since PSWAC concluded, NPSTC has continued to work on the issues identified in that process as well as other issues involving public safety communications.

With over 74,000 public safety organizations in the United States, it is critical to have a resource and an advocate for public safety telecommunications. That is the primary role of the National Public Safety Telecommunications Council.

NPSTC is a federation of public safety associations that encourages and facilitates, through a collective voice, the implementation of the Public Safety Wireless Advisory Committee (PSWAC) and 700 MHz Public Safety National

Coordination Committee (NCC) recommendations. NPSTC operates with a consensus process which permits open discussion regarding critical public safety communications issues between the member and liaison organizations.

NPSTC also explores emerging public safety telecommunications issues and technologies, and develops recommendations to appropriate governmental bodies to support the broad goals of promoting public safety telecommunications worldwide.

Finally, NPSTC serves as a standing forum for the exchange of ideas and information regarding public safety telecommunications. NPSTC currently consists of the following thirteen organizations:[1]

American Association of State Highway and Transportation Officials
American Radio Relay League
American Red Cross
Association of Public-Safety Communications Officials-International
Forestry Conservation Communications Association
International Association of Chiefs of Police
International Association of Emergency Managers
International Association of Fire Chiefs
International Association of Fish and Wildlife Agencies
International Municipal Signal Association
National Association of State Emergency Medical Services Directors
National Association of State Telecommunications Directors
National Association of State Foresters

I'd like to begin with a discussion regarding the definition of interoperability. Interoperability is:

> The ability for two or more political jurisdictions' first responders to talk directly, even those using disparate communications systems.

"Studies show that across the nation, public safety officials have trouble communicating in operational situations *one third of the time.*" [2] Therefore, our goal must be to ensure that all public safety first responders can talk to each other directly while en route and on the scene of any joint response incident.

[1] A number of Federal agencies are affiliate members of NPSTC and active participants in its ongoing efforts.
[2] Rick Murphy, PSWIN program manager

We have identified the three types of interoperability needed by our public safety responders:

1. Day-to-day – Routine operations like pursuits
2. Mutual aid – Joint and immediate response, and tactical
3. Task force – Communications for events that occur without warning; events that are planned in advance and last an extended period of time

There are several ways to achieve the various interoperability modes. We can for example:

Exchange radios on scene
Use the talk-around mode
Use the national mutual aid channels
Use a gateway to patch systems together
Roam onto systems like our own, if pre-arranged
Use a standards-based system with a variety of vendors supplying equipment

Interoperability has been brought to the forefront by disasters such as the Air Florida plane crash, here in DC, on the 14th Street Bridge. Rescuers were hampered in their rescue efforts because of incompatibility of public safety equipment and operational plans. Since that time, changes have been made and responders can talk, however, that is not the case all over the nation.

After the Air Florida crash, the inability for public safety responders to talk was further brought to light in the Morrow Building bombing, where runners where used to provide communications between command centers. Again, local users banded together to work out the issues so they could talk during future incidents. However, there was not a nationwide effort or mandate.

In 2001, when the World Trade Centers were attacked, lives were lost due to the inability to contact firefighters in the building.

In a more recent occurrence, last week in the San Diego fires, the National Guard, state police, and fire, all had to talk together to move victims to shelters and provide public safety responses. Without a common operational plan and technology solution, this would have been impossible. Fortunately, San Diego has been ahead of the curve in working on their interoperability issues. What about the other 74,000 agencies, of which, in the case of police agencies, 85% have less than 25 sworn police officers? They do not have technical expertise, or funding, to support a long-term study of the issue. This is where the federal government can have a positive impact.

Over the years, several steps have been taken to educate our political leaders about interoperability. Some of those steps include a video produced by NIJ

entitled "Why Can't We Talk?" that was widely distributed. Several years ago another federal initiative bringing together state and local elected officials, with the public safety leadership, brought awareness on many levels about this problem. The National Task Force for Interoperability began an education process and developed documents to help spread the message.

Over the past several years the major public safety associations, including NPSTC, have participated with the Federal Communications Commission's National Coordination Committee, to develop plans and regulations for interoperability channels in the 700 MHz band. Our work is complete; however, there are still Broadcast stations in this spectrum. Congress should support moving these stations out of the interoperability spectrum so that we can begin using it to develop systems that will be able to talk to each other.

Another major step in the right direction is the formation of project SAFECOM. SAFECOM was born to begin finding solutions that work across the local, state, and federal agencies, and to support small agencies that have neither the funding nor technical expertise to work on this issue.

NPSTC currently has several initiatives in the works:

- NPSTC has been working on the interference in our existing 800 MHz band for several years. Our member associations have worked to develop materials for users and education regarding the issue. The interference cannot be "fixed" until one of the interfering parties leaves the spectrum. A plan in front of the FCC right now called "The Consensus Plan" is the only permanent solution to the problem.
- We are working to develop some standardization of technologies being used in the 4.9 MHz band. This band will be used for new technologies which we hope will allow public safety to select technology from multiple vendors instead of limiting us to a select few vendors with stovepipe solutions.
- We have representatives working with manufacturers developing software defined radios. These radios will be flexible in the use of available spectrum and new technologies.
- NPSTC is also working with DOD projects to share some of their technology and move together to support development of new equipment that ultimately will support both the military and local public safety. We want to maintain this relationship as new technologies become available.

NPSTC members deal with interoperability issues each day. From a daily mutual aid response between fire districts, to a vehicle pursuit moving from one jurisdiction to another, interoperability really covers public safety's daily activities. Our members cannot understand why they can use a cell phone brought from

one state to another, yet their public safety radio cannot talk to other responders in the same county or township.

The problems generated by disparate radio spectrum and interoperability are not truly comprehended until a major disaster takes place and people die. Then the message is, "the communications systems didn't work." Sometimes communications failed because people failed to take the right actions during the planning process. Sometimes it is purely a financial decision driving the radio system's engineering to save a few dollars. There are many facets to interoperability and they should be dealt with by our leaders.

Who controls the system should not be a question of politics, as it is today. A way to improve on the planning and politics is for federal grants to require multi-jurisdictional planning of radio systems for all grant dollars provided from the federal government. These systems should all be required to use a single standard called Project 25. Funding for planning should be permitted under federal grants as long as multiple jurisdictions participate, and there should be no exceptions.

We should continue to be reminded that it does not take towers falling to cause a situation where interoperable equipment is required. These disasters brought attention to the problem in New York. However, this is not a NYC problem; it is a problem across the country. We should not wait until the next disaster before we get federal assistance to improve interoperability all over the nation.

So what can Congress do to help improve Public Safety communications? Here are a few suggestions:

- Assist in ensuring that 700 MHz bands are cleared as soon as possible.
- Encourage the FCC to resolve the 800 MHz interference issues.
- Require that federal grant funding ensure that users have to build to a public safety standard.
- Allow grant funding to develop new technology standards.
- Encourage a National Center for Interoperability Source Guide to all the different interoperability funding and research studies for locals to access on the web.
- Develop a standard set of frequencies and standards of use in a disaster area, and provide clear implementation guidelines.
- Allow grant funding for communications technician and operator training. All the plans in the world won't work unless people know how to use the technology.

Thank you for allowing me to appear in front of this body and I welcome the opportunity to address any of your questions.

Mr. PUTNAM. Thank you very much, Ms. Ward.

I want to thank both of our witnesses for adhering to our 5 minute limit.

I welcome the gentleman from Massachusetts, Mr. Tierney, who has joined us as well.

Our next witness is Aldona Valicenti. Ms. Valicenti is the chief information officer for the State of Kentucky, a position she has held since 1997. She is Kentucky's first CIO. She is here today representing the National Association of State Chief Information Officers, an organization for which she previously served as president. Ms. Valicenti also serves as representative of the Nation's State CIOs to the Public Safety Wireless Network Program and SAFECOM Initiative. Prior to becoming Kentucky's CIO, Ms. Valicenti spent 21 years in the private sector serving in IT leadership positions, including management positions at Amoco and Dow Corning.

Welcome. You are recognized.

Ms. VALICENTI. Chairman Putnam and Chairman Shays and members of the committee, and Honorable Congresswoman Harman, thank you very much for this opportunity.

Rather than reading the testimony which we have submitted, I would like to take this opportunity and really reiterate many of the points that you have already made, and maybe with a slightly different twist to them. In some cases I will try to give you examples from the States that will allow you to relate to some things that have worked and, frankly, some things that have not worked very well.

But the whole issue of interoperability is, frankly, too late to plan for when you need it. The planning and the coordination needs to take ahead of time, and long before that.

The issue of interoperability is one that has existed for many, many years from a public safety perspective. When you deal with criminal justice systems, it has always been part of the criminal justice system; how do we communicate better on the information that we have.

So let me address some of the same points that you already have made and this committee has already made.

Technology and standards. It is probably the single most important component. When we talk about technology and standards, they are not something that is nebulous, they are not something that is unreal, but they are things that we can relate to. Architecture, in fact, is a blueprint for how things interrelate, and maybe one of the best examples that I can give you on where standards in technology does work is the working of the Internet. If it wasn't for standards, we probably would not enjoy many of the benefits of the Internet. Standards are well known, people ride to those standards, and we have used them. I suggest to you that we have an opportunity to drive the same kind of architecture in standards in this whole arena, which will allow us to then, hopefully 1 day, sit here and say we have the interoperability issue solved.

So functionality exists, and exists in many cases, but we have not been very strong in endorsing them. Project 25 is one of those initiatives that has really relied on driving standards, and that is certainly one of the areas that we could be much more proactive. So

NASCIO supports really the use of flexible and open architecture, and encourages all public safety agencies to really purchase equipment where it is advertised that it supports a standard.

I would like to point out two States who have done an excellent job: Michigan and Delaware. Both were one of the first States to implement a standards-based compliance systems. In Michigan, that is known as the Michigan Public Safety Communications System, now has more than 300 local State and Federal public safety agencies and 10,000 radios in the system. Delaware has done something similar in the 800 megahertz system. Again, two States who have taken a very proactive approach.

We have already heard some discussion of spectrum allocation. Spectrum allocation is a huge issue. Public safety community really has access to very small portion of that spectrum and, as you have already heard, that has a great deal of interference. So really looking at a preplanning, again, of the spectrum is an issue. Many of the States have applied for the 700 megahertz, and I wrote the letter for Governor Patton to apply for the 700 megahertz, but, frankly, right now there is not much hope that we will have that over the near future. 2006 is not that far away, and when we look at that date, there is little movement to really implementing that.

NASCIO published a white paper on public safety wireless interoperability and again addresses the issue of the 700 megahertz. But that is an issue that we, frankly, either need movement toward or much more discussion, that we cannot hold out hope for that. In that white paper, we also addressed many of the issues which today, as Congresswoman Harman suggested, are now parts of the HERO Act, and have had discussions over that.

Let me address one other topic, because it is really a cultural topic, and maybe that is the one that is most difficult to address. Public safety agencies don't traditionally work well together, and preplanning is really not part of the culture. And this is where we have taken a dramatic approach, I think, in Kentucky. The general assembly passed a bill creating the Kentucky Wireless Interoperability Executive Committee, which brings together multiple agencies, State, local agencies together as a body to the advice of the CIO, and what we ought to do with further purchasing and implementing of systems.

And the last item is one really of innovative funding. There is no single amount of money that will buy or deploy all the systems that we need. And this is one example where I think that, as Governor Janklow indicated, South Dakota has done an excellent job because they took multiple pools of funds and delivered a system that is ultimately very interoperable.

Infrastructure requirements are great in two areas which, frankly, I have not yet heard discussed, but if you allow me just a couple of seconds. The ongoing support of the infrastructure. All of these radios have to be able to communicate with an infrastructure of existing cell towers or capabilities that are satellite communication capabilities. Most small communities do not have that; the State needs to provide that. And that is the huge issue for many, many of the States.

And last, but by no means least, is really the requirements of the role of the CIO. The CIO in many States, as I do in Kentucky,

plays a critical role in bringing together local, State, and, frankly, Federal officials who operate in our States together into a uniform and common conversation to actually deliver some of the interoperability vision that was discussed here today.

Thank you very much.

[The prepared statement of Ms. Valicenti follows:]

TESTIMONY OF ALDONA VALICENTI
CHIEF INFORMATION OFFICER, COMMONWEALTH OF KENTUCKY
PAST PRESIDENT, NATIONAL ASSOCIATION OF STATE CHIEF INFORMATION OFFICERS (NASCIO) AND
NASCIO REPRESENTATIVE TO THE PUBLIC SAFETY WIRELESS NETWORK PROGRAM

HOUSE SUBCOMMITTEE ON NATIONAL SECURITY, EMERGING THREATS AND INTERNATIONAL RELATIONS AND HOUSE SUBCOMMITTEE ON TECHNOLOGY, INFORMATION POLICY, INTERGOVERNMENTAL RELATIONS AND THE CENSUS
HEARING ON FIRST RESPONDER INTEROPERABILITY
NOVEMBER 6, 2003

Chairman Putnam, Chairman Shays and Members of the Subcommittees,

Thank you for inviting me to appear before you today, representing the National Association of State Chief Information Officers (NASCIO), to offer my perspective on the issue of public safety communications interoperability and how state CIOs can play a key role in achieving this elusive goal. NASCIO appreciates your attention to this important matter and willingness to get input from the individuals and organizations that have a direct stake in the outcome. We believe that success will come from building on existing intergovernmental partnerships to address the interoperability problem and looking for solutions that focus on collaboration and planning at the local, state and Federal levels.

The tragic events of September 11, 2001 made us all painfully aware of the importance of public safety agencies and personnel being able to communicate during an emergency. Never was this more apparent than during the attack on the World Trade Center in New York City. As thousands of firefighters, police officers and emergency personnel rushed to the scene to aid victims and search for survivors, incident commanders were hearing warnings from helicopters circling above the scene that the towers were beginning to glow and dangerously close to collapse. Radio communications were a lifeline for the police officers who received word to evacuate the building – all but 60 police officers escaped with their lives. Tragically, hundreds of firefighters didn't receive that warning because they were using an incompatible radio communications system.

At the same time, a different picture emerged from the Pentagon. Federal, state and local emergency responders at the scene experienced little difficulty establishing interoperable communications during the initial response because they had developed and implemented a

mutual-aid interoperability plan. This plan was developed in response to the 1982 Air Florida plane crash in Washington, D.C. during which emergency personnel were unable to communicate with one another, hampering rescue efforts. As a result, most of the first responders at the Pentagon had common radio frequencies pre-programmed into their portable radio equipment. This regional planning produced successful policies and procedures for mutual-aid interoperability on 9/11.

Importance of Communications Interoperability to the States

The lack of communications interoperability between emergency responders is not a new problem. State and local officials have been dealing with this issue for a long time. The events of 9/11 merely raised the level of awareness around the country. Law enforcement officials, firefighters, EMS technicians, emergency management personnel, public utilities, hospitals, state highway workers, and other public health and safety entities have always needed to communicate with their peers from other agencies and jurisdictions. Even during "routine" incidents such as traffic accidents, chemical spills, and weather-related emergencies, these individuals must be able to communicate to coordinate an effective response. Sadly, emergency responders are often forced to send and receive instructions over multiple radios to reach units from different agencies and jurisdictions. In extreme cases, they must use runners to deliver hand-written notes. As a result, minutes are lost and lives and property are at risk.

How did we get in this situation? A combination of aging and incompatible equipment, limited and fragmented spectrum, poor planning and coordination, inadequate and stovepiped funding, and even human factors such as agencies' natural reluctance to give up management and control of their systems have all contributed to the current state of affairs. And while there is no magic solution, there are a number of important steps that can be taken at the Federal, state and local level to overcome these barriers to communications interoperability.

Technology and Standards

One of primary impediments to communications interoperability is the incompatibility of public safety communications systems and equipment. The need for open standards became increasingly clear in the 1980s as manufacturers began offering improvements to the functionality and efficiency of their analog radio systems. Better, more secure systems emerged, but each manufacturer used unique protocols to provide these enhancements. In response, a cooperative effort on the part of local, state and Federal public safety users established interoperability standards for digital voice and data communications. Known as Project 25, this initiative relied on public safety mission critical requirements to drive the development of the standards. NASCIO supports the use of flexible and open architectures and encourages all public safety agencies to purchase equipment that conforms to these standards.

Michigan and Delaware were among the first states to implement standards-compliant systems designed to provide statewide interoperability. The Michigan Public Safety Communications System (MPSCS) now has more than 300 local, state and Federal public safety agencies with approximately 10,000 radios on the system. In Delaware, their 800 MHz system provides statewide coverage for more than 7,000 local, state and Federal emergency responders. Future enhancements will enable greater communications interoperability with neighboring states.

Spectrum Allocation
The increased demand for wireless communications capabilities has made the usable radio spectrum a very limited natural resource and nearly all available frequencies have been allocated. The public safety community has access to a very small portion of this spectrum which results in congested radio traffic and increased interference. This severely limits the ability of emergency responders to communicate with one another and can jeopardize their safety. Further complicating the interoperability problem is the fact that these allocations are fragmented into many different bands of the radio spectrum. Recent FCC spectrum allocations for public safety use in the 700 MHz and 4.9 GHz range are a step in the right direction, but it could be many years before state and local governments can fully utilize the newly allocated spectrum.

NASCIO has published a white paper on public safety wireless communications interoperability that addresses the radio spectrum issue for public safety and specifically the allocation of additional spectrum in the 700 MHz band. Current law allows TV broadcasters to retain their existing analog channels through the end of 2006, or when at least 85 percent of households have access to digital television – whichever is later. The uncertainty over when, or if, this spectrum will be vacated has prevented many state and local governments from making plans or funding commitments to use the newly allocated spectrum. Many of the concerns discussed in the NASCIO white paper are addressed in H.R. 1425, the Homeland Emergency Response Operations (HERO) Act, which ensures that TV broadcasters transfer the spectrum for public safety use by December 31, 2006.

Planning and Coordination
Making interoperability a reality requires public safety agencies and jurisdictions to work together to develop common solutions and systems. NASCIO believes that state leadership is essential to developing a coordinated approach to achieving interoperability and improving the nation's public safety communications infrastructure. States should establish a foundation for collaboration and planning through statewide interoperability councils or similar governing bodies. A well-defined governance structure improves the process of any major project and such an entity should be authorized to make decisions about and oversee the implementation of interoperability initiatives. It can also be effective for enhancing communication and cooperation, establishing guidelines and policies, and reducing turf battles among agencies and jurisdictions. The public expects their lives and property to be protected by government – whether federal, state or local – without distinction as to who responds. Citizens also expect government to work efficiently with the private sector when necessary. To effectively respond to emergencies, government and industry must plan for interoperability from the outset.

In Kentucky, the 2003 General Assembly passed a bill creating the Kentucky Wireless Interoperability Executive Committee (KWIEC) to advise and make recommendations to the state chief information officer regarding strategic wireless initiatives to achieve public safety voice and data communications interoperability. KWIEC membership represents various state agencies including state police, emergency management, homeland security, transportation and natural resources along with local representation from city and county government, police, fire, 911 dispatch and EMS.

Innovative Funding

Public safety agencies have historically developed radio communications systems based on individual needs, and spending decisions were based on strategies that did not consider the need for interoperability. Traditional funding mechanisms have done little to discourage the development of stand-alone public safety communications systems, further exacerbating the problem. Upgrading or replacing these incompatible systems and equipment poses a significant funding challenge for most state and local jurisdictions. Estimates to replace the nation's public safety communications infrastructure with a fully interoperable one exceed $18 billion. Many jurisdictions have proposed new systems to be shared by multiple agencies, yet the cost of these projects can exceed $200 million and public safety must compete for scarce financial resources with other interests such as education, health care and transportation. Despite these costs, state and local governments must invest in new wireless communications systems and equipment. Officials at all levels of government should develop funding strategies and incentives that encourage greater local, state and Federal participation and cooperation in the development of shared or compatible systems.

A number of states have used innovative approaches to funding shared, statewide radio systems. For example, the South Dakota Legislature approved a bill during its 1999 session directing state agencies to integrate their existing radio functions and facilities into a single, cohesive network. Using a combination of federal grant funds, legislative appropriations and agency funding, the state developed a new system infrastructure and purchased mobile and portable radios for all state and local public safety users. And in Minnesota, the state transportation department financed half the cost of a new statewide communications infrastructure, partly through general obligation bonds and partly with monies from the state's highway fund. The other half of the capital costs came from a 911 surtax collected on all wired and wireline telephone lines.

Infrastructure Requirements

While funding for new standards-compliant communications equipment is essential, an often overlooked component of these system implementations is the underlying infrastructure that must be in place to support them. For example, new Federal grant funding has been made available for 42 counties in southeastern Kentucky to improve the effectiveness of law enforcement through the deployment of wireless technology equipment. However, no funding provision was made for infrastructure such as cell towers or satellites to support the new devices. Unless additional funding is secured, the state will have to come up with the necessary funding to build and maintain the infrastructure.

States are increasingly taking a lead role in establishing and maintaining public safety wireless communications systems to enable multiple agencies to communicate within and across departmental or jurisdictional boundaries. Open architecture and standards, expanded radio spectrum allocation, better planning and coordination, innovative funding approaches, and an understanding of the infrastructure requirements are all critical to achieving the goal of wireless communications interoperability.

Role of the State CIO in Achieving Interoperability

With an enterprise view of technology, state chief information officers have emerged as key members of their state's homeland security and first responder teams. Homeland security and

emergency preparedness and response are natural extensions of the state CIO's role, particularly as it relates to the communications infrastructure that supports public safety in the detection and response to threats and incidents.

As mentioned above, a key component of achieving public safety communications interoperability is effective planning and coordination. State CIOs are typically responsible for developing and maintaining the statewide communications infrastructure that supports multiple public agencies and institutions, and should be an integral part of any IT planning and coordination process. As skilled communicators, consensus builders and change managers, state CIOs are uniquely positioned to facilitate these collaborative planning efforts and provide a roadmap for all to follow. In addition to this facilitation role, CIOs can help establish and enforce a statewide wireless communications architecture and standards.

In my own experience in Kentucky, I have seen first hand how critical this compliance function is. My responsibilities as Commonwealth CIO include reviewing and overseeing large and integrated IT projects and systems for compliance with statewide strategies, policies and standards, including alignment with the Commonwealth's business goals. The CIO also prioritizes and approves capital planning IT items across the Commonwealth and chairs the Enterprise Architecture and Standards committee to ensure that IT systems are compatible. These authorities enable me to move the statewide enterprise toward integration and commonality, and to reap the benefits of increased efficiency, reduced redundancy, reduced costs and greater service to citizens.

States' Perspective on the Value and Role of the SAFECOM Program

Over the past few years, NASCIO has worked closely with a number of federal wireless interoperability entities including the Public Safety Wireless Network (PSWN) – a jointly sponsored program of the U.S. Department of Justice and the U.S. Department of the Treasury – and the National Task Force on Interoperability (NTFI), a National Institute of Justice-sponsored coalition of 18 national associations representing state and local elected, appointed and public safety officials.

Since its inception in 1996, the PSWN program has provided states with access to a wealth of resources and solutions ranging from outreach and education strategies with stakeholders, to start-up assistance for state interoperability executive committees (SIECs), to support for statewide system planning and implementation efforts, to documenting and sharing best practices. In addition to directly supporting numerous state initiatives, PSWN's interactive web site, *Public Safety WINS: Wireless Interoperability National Strategy*, enables public safety officials to view policy and technical solutions and other resources related to managing interoperability challenges. The site provides an overview of interoperability within each state and describes local or regional activities and success stories. As the NASCIO representative on the PSWN Executive Committee, I can personally attest to the positive impact of the PSWN program on state public safety communications interoperability efforts.

Similarly, the recent NTFI collaboration initiative produced a number of instructive documents aimed at educating state and local policy makers on the topic of public safety communications interoperability. The final NTFI report, entitled *Why Can't We Talk?: Working Together to*

Bridge the Communications Gap to Save Lives, highlighted many of the success stories from around the country and relied extensively on PSWN program data and materials. Otto Doll, chief information officer for the State of South Dakota, represented NASCIO on the task force and the development of South Dakota's statewide radio system was not only documented in the NTFI report, but is also identified as a "best practice" on Public Safety WINS.

An effective national public safety wireless communications program must provide leadership, technical guidance and funding support. At a recent PSWN Executive Committee meeting, we were briefed on the priorities of the SAFECOM program and the role of the PSWN program within the new SAFECOM construct. I was encouraged by the emphasis on developing a national interoperability strategy, providing a technical architecture for an integrated national system, coordinating all Federal interoperability grant programs, and creating a national training and technical assistance program to help fund demonstration projects and pilots.

States will benefit from a clearer definition of the components of the SAFECOM program and a better understanding of their role in developing an adaptable national public safety communications infrastructure. We urge SAFECOM officials to build on the strong foundation and relationships that have been established through the PSWN and NTFI initiatives and continue to reach out to the state and local officials through their various national organizations.

Conclusion
In conclusion, Mr. Chairman, let me reiterate NASCIO's recommendations for achieving public safety communications interoperability. Congress should:

- Support the use of flexible and open architectures and encourage all public safety agencies to purchase systems and equipment that conform to national standards;

- Allocate sufficient radio spectrum for public safety use to reduce or eliminate congestion and interference from other public and commercial users;

- Encourage states to play a lead role in developing a coordinated approach to achieving interoperability by establishing statewide interoperability executive councils, or similar governing bodies, representing all stakeholders to make decisions about and oversee the implementation of strategic wireless initiatives;

- Ensure that all Federal funding programs for first responder communications equipment is spent effectively and efficiently through the coordination of statewide or regional plans. In other words, support funding requests that work to achieve interoperability and reject those that do not include interoperable solutions; and

- Look to the state CIOs to help facilitate collaborative planning efforts at the state and national level and establish and enforce communications architectures and standards.

Every day the lives of American citizens and the public servants charged with keeping them safe are jeopardized as a result of problems associated with public safety wireless communications interoperability. Achieving interoperability requires solving a number of administrative and

technical issues including the need for increased funding, open standards and greater public safety spectrum allocation. The goal, however, remains simple – providing communications systems and equipment that will allow public safety responders to communicate and share information with other peer responders using the radio or mobile data terminal with which they are equipped. Accomplishing this goal will require better planning and coordination at the local, state and national levels. NASCIO stands ready to help lead the charge for improving the nation's public safety communications infrastructure. Thank you.

Mr. PUTNAM. Thank you.

Our next witness is Marilyn Praisner. The Honorable Marilyn Praisner serves on the Montgomery County, MD County Council, first having been elected in 1990. She now chairs the management and fiscal policy committee of the Council. Prior to her election on the County Council, she focused great attention on education issues, having served 8 years on the county school board. Councilwoman Praisner is currently chairman of the National Association of Counties Telecommunications and Technology Committee and chairs a local government alliance group called TeleCommUnity. She joins us today representing the views of those organizations.

You are recognized.

Ms. PRAISNER. Thank you very much, Mr. Chairman. Good morning, Mr. Chairman, ranking members, and members of the subcommittees. My first statement has been circulated and will be entered into the record, so I will just summarize some of the points.

We cannot achieve homeland security unless we have public safety wireless communications networks that are capable of supporting coordinated responses to threats at the neighborhood, county, regional, or national level. As multiple agencies in multiple jurisdictions respond to crises, interoperability is essential.

Equally important is the need to address interference. The International Association of Chiefs of Police recently stated that 360 jurisdictions now have interference issues. That is more than in any other previous year. But rather than assign fault, let me share what I have learned from my work in this area.

Public safety is a core function of all levels of government, and wireless communication is an essential element. Interoperability and interference are major obstacles, but so are turf battles and the lack of cooperation across jurisdictions. The solutions to the challenges of interoperability and interference will not be cheap, but neither is the cost of inaction.

While there is no such thing as a one-size-fits-all solution, solutions can only be achieved if there is leadership at the Federal level and a commitment to cooperation at the State and local level. Congress and the FCC must recognize their responsibilities by taking steps to ensure that local public safety agencies have adequate funding to achieve interoperability and have access to additional spectrum to alleviate serious interference problems. Local government elected officials must be at the table if solutions are to be reached, for while we need the Federal Government's leadership, Federal leaders need local governments' ownership of the issue.

One example of the challenges faced in the real world is the interference experience of Anne Arundel County, MD. In 1998, Anne Arundel began to experience dead zones or blackouts. In 61 dead zones public safety personnel were unable to use portable receivers on their 800 megahertz radio system in the vicinity of commercial radio antenna sites.

Now, while such dead zones would be a problem in any locale, in Anne Arundel County such dead zones have national implications, for in addition to being home to Annapolis, the State's capital, Anne Arundel is home to the National Security Agency, the U.S. Naval Academy, the Chesapeake Bay Bridge, and Baltimore-Washington International Airport.

After having no success at the FCC, the county sought to avoid creation of any new dead zones by means of a land use approach. They required advance coordination for tower siting. The ordinance was challenged at the FCC as being a preempted action and the Commission agreed. Because other communities are experiencing the same challenges, the FCC, in March 2002, opened a rulemaking to consider a proposal by Nextel and others that would realign the spectrum at 800 megahertz. While it is possible that the FCC's decision will finish the job of interference reduction, no decision is expected until 2004, if then. That would mean that the county will have waited 6 years for a solution to their interference issue.

On the bright side, there are many examples across this country where jurisdictions are working together to solve communication problems. We need to share these successes, because education and training and information are critical, and to that end I recommend to you the NTFI document that we all participated in, "Why Can't We Talk?"

At the Federal level, PSWN, now part of SAFECOM, has been very helpful in broadening that education. I attended my first SAFECOM meeting this past Monday, and there also I think we are now moving in the right direction. It is my hope that SAFECOM will coordinate and hopefully reduce the number of well intentioned Federal initiatives across a number of agencies.

On an even brighter note, let me conclude by thanking the leadership of this committee for holding this hearing and for demonstrating that you get it. Local government officials must be at the table. We have to be here because there is no perfect national solution to interoperability or interference. The nuances of each region are too complex for a one-size-fits-all approach. Thank you very much for giving local government an opportunity to speak.

[The prepared statement of Ms. Praisner follows:]

"First Responder Interoperability: Can You Hear Me Now?"

Honorable Marilyn Praisner
Council Member,
Montgomery County, Md.

on behalf of

TeleCommUnity

and

The National Association of Counties

before the

Subcommittees on

National Security, Emerging Threats and International

Relations

and

Technology, Information Policy, Intergovernmental Relations and the Census

of the

Government Reform Committee
United States House of Representatives

November 6, 2003

I. INTRODUCTION

Good Morning Mr. Chairmen, Ranking Members, and Members of the Subcommittee on National Security, Emerging Threats and International Relations and the Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census. My name is Marilyn Praisner and I am a member of the County Council of Montgomery County, Maryland. I am testifying today as the Chair of TeleCommUnity and the Chair of the National Association of Counties' Telecommunications & Technology Committee. TeleCommUnity is an alliance of individual local governments and their associations, which seeks to refocus attention in Washington on the principles of federalism and comity for local governments' interests in telecommunications. NACo is the national association of the nation's 3066 counties and seeks to ensure county officials' voices are heard and understood in the White House and the halls of Congress.

In addition to my leadership positions in TeleCommUnity and NACo, I have real life experience with the challenges facing local governments in the fields of interoperability and interference. I have gained these insights as a:

- Chair of the Montgomery County Council Committee which oversaw the County's new 800 MHz system including addressing the issues of towers and dead zones:
- Vice Chair of the FCC's Local State Government Advisory Council:(LSGAC)[1]
- Executive Board member of the of Public Safety Wireless Network: (PSWN)[2]

[1]While recently disbanded by the FCC, the LSGAC was formed in 1997 to advise the FCC on issues of concern to state, local and tribal governments. The LSGAC was comprised of local, state and tribal government officials from throughout the country.

[2] Jointly sponsored by the Department of Justice and the Department of the Treasury, PSWN was formed to promote effective public safety communications and to foster interoperability among local, state, federal, and tribal communications systems. The program brought together the Federal Law Enforcement Wireless Users Group and an

- Executive Committee of SAFECOM;[3]
- Vice Chair of the National Task Force on Interoperability (NTFI)[4]; and
- Board member of the Board of the Capital Wireless Integration Network (CapWin),[5]

II. WHERE WE FIND OURSELVES TODAY

My assessment of the status of interoperability and interference can be summed up by the conclusion with which the National Task Force on Interoperability (NFTI) opened its book ***Why Can't We Talk.***[6] NFTI stated:

> In an era where technology can bring news, current events, and entertainment from the farthest reaches of the world, many law enforcement officers, firefighters, and emergency medical service personnel working in the same jurisdiction cannot communicate with one another.

Because I believe this Committee is looking for solutions, and not to assign fault for our current status, let me begin my testimony by summarizing what I believe are the significant matters on which NTFI, CapWIN and PSWN agree:

1. Public safety is a core function of all levels of government.
2. Wireless communication is an essential element in executing our joint public safety responsibilities.

---

executive committee of local and state public safety officials, to address mutual challenges to improving public safety communications interoperability.

[3] SAFECOM was established by the Office of Management and Budget and approved by the President's Management Council to serve as the umbrella program within the Federal government to help local, tribal, State and Federal Public safety agencies improve public safety response.

[4] NTFI was a collaborative effort of eighteen national associations representing the first responders community, and state and local elected and appointed officials

[5] CapWIN is a state-of-art wireless integrated mobile data communications network being implemented to support federal, state, and local law enforcement, fire and emergency medical services, transportation, and other public safety agencies primarily in the Washington, DC Metropolitan area.

[6] The book may be downloaded at http://www.agileprogram.org/ntfi/ntfi_guide.pdf

3. Interoperability and interference are major obstacles, along with lack of cooperation across jurisdictional lines, to government maximizing its return on investments in public safety wireless communications assets.[7]
4. The solutions to the challenges of interoperability and interference will not be cheap, but the cost of not acting is so much greater than the cost of fixing these problems.
5. While there is no such thing as a "one size fits all solution", solutions can only be achieved if there is leadership at the federal level and a commitment to cooperation at the state and local level.
6. Congress and the Federal Communications Commission must recognize their responsibilities in solving the problems of interoperability and interference by taking steps to ensure that local public safety agencies have adequate funding to achieve interoperability and have access to additional spectrum to alleviate serious interference problems.
7. Local government elected officials must be at the table if solutions are to be reached. For while we need the federal government's leadership, federal leaders need local government ownership of the issue, if we are to jointly make interference-free interoperable communications a reality.

III. INTEROPERABILITY – "BY RADIO, ON DEMAND IN REAL TIME"

We can not achieve homeland security unless we have public safety wireless communications networks that are capable of supporting coordinated responses to threats at the neighborhood, county, regional or national level. It is no longer acceptable for individual public

[7] I believe it is vitally important for the Committee to understand the challenges are not just technical. Turf battles, lack of knowledge and unwillingness to work together are equally to blame for the challenges of interference and lack of interoperability.

safety agencies to build communications systems that do not communicate with each other. To be effective before, during and after any given emergency, public safety officials, at all levels of government, must be able to communicate with each other. As multiple agencies in multiple jurisdictions respond to crises, interoperability is essential.

That is why I believe that the PSWN definition of interoperability should be the standard by which we measure achievement.[8] PSWN states that for a system to be interoperable it must permit

> **"public safety personnel in different agencies or jurisdictions to communicate with each other by radio on demand, in real time."**

We are not there yet.

The challenge of interoperability is not new. While September 11th brought the lack of interoperability into sharper focus, local officials have spoken for years about the basic problems of the lack of interoperable equipment and the lack of adequate interoperable spectrum.[9] If there is a positive outcome from the events of September 11th, 2001, it may be that the public has come to recognize that communication is a primary tool for those who protect life and property even in less publicized events. It is also a vital tool in no less life-threatening incidents – such as fires, floods, hurricanes, tornadoes, major traffic accidents, and the pursuit of armed criminals.

---

[8] TeleCommUnity, NACo and the National Task Force on Interoperability employ almost the identical standard for interoperability.

[9] As ***Why Can't We Talk*** noted, it is sadly ironic that on September 11, 1996, five years before the attacks of September 11, 2001, the Public Safety Wireless Advisory Committee (PSWAC) released its final report. PSWAC concluded "unless immediate measures are taken to alleviate spectrum shortfall and promote interoperability, public safety will not be able to adequately discharge their obligation to protect life and property in a safe, efficient, and cost-effective manner."

IV. INTERFERENCE

In the 800 MHz band, there is a very real problem with "dead zones."[10] Dead zones are areas where pubic safety radio communication is impossible because of interference caused by commercial mobile radio service ("CMRS"); or system operational limitations such as antenna placement or the reception/transmission capabilities of existing equipment.[11]

Many of the issues with interference arise from the FCC's decision to place commercial and public safety wireless communications in close frequency proximity. The FCC has complicated matters by leaving the wireless industry and local government to "work out" emissions interference, or worse, denying local government the ability to protect their first responders.

Local elected officials recognize that radio/telecommunications spectrum is a finite resource, but public safety radio dead zones must be eliminated. America cannot tolerate police officers and firefighter not being able to communicate while involved in life-threatening situations.

A. The Anne Arundel Experience

Let me share with you the experience of Anne Arundel County, Maryland and the less than satisfactory assistance they have received from the Federal Communications Commission.

---

[10] The National Task Force on Interoperability defined dead zones or dead spots as: "The area, zone, or volume of space that is within the expected range of a radio signal, but in which the signal is not detectable and therefore cannot be received. Common causes of dead spots include depressions in the terrain and physical structures.

[11] In this testimony I will limit my comments to commercial interference as the cause of interference. One should not read my testimony as stating commercial interference is the only cause of dead zones. For a description of dead

In 1998, Anne Arundel County, Maryland began to experience "dead zones" or "blackouts." In these dead zones, police, fire or emergency service personnel were unable to use portable receivers on their 800 MHz public safety radio system in the vicinity of commercial radio antenna sites where transmitters also operated in the 800 MHz band. Now while such dead zones would be a problem in any locale, in Anne Arundel County, such dead zones have national implications. For in addition to being home to Annapolis, the state's capital, Anne Arundel is also home to such national assets such as the National Security Agency, the United States Naval Academy, the Chesapeake Bay Bridge, the Baltimore -Washington International Airport and 533 miles of the Chesapeake shoreline. Anne Arundel County has a public safety communications commitment to all of us.

The County informed the FCC of these dead zones and an investigation commenced, only to reach the disputed conclusion that the problem was largely attributable to out-dated receivers used by the County.[12] Adding insult to injury, a year later, in early 2000, the County's police chief wrote to the FCC Chairman to outline the continued and growing problem of dead zones, and has yet to receive a response.

By March of 2002, even the FCC came to realize that the interference being experienced by Anne Arundel's police and firemen when in proximity to the cell towers housing cellular carriers operating at 800 MHz could not be resolved by receiver improvements alone. Because Anne Arundel was not the only jurisdiction experiencing such interference problems, the FCC

---

zones due to lack of coverage or in building signal failure see: Church, *Radio dead zones in buildings Eyed,* The News Journal; September 15, 1999 (Delaware)

[12] The conclusion was disputed by the receiver manufacturer, Motorola, and by the County, which pointed out that no equipment or filtering capability existed that could deliver the remedy suggested by the FCC.

opened a rulemaking to consider a proposals by Nextel and others that would "realign" the spectrum at 800 MHz so that public safety uses would be farther removed from commercial uses. The County also hired its own technical consultant to examine the extent of commercial interference to its radio system and recommend solutions. The consultant found 61 dead zones across the County resulting from the operations of Nextel and Cingular Wireless and, to a lesser extent, Verizon Wireless.

Armed with the consultant's report, the County sought the cooperation of the carriers in mitigating or eliminating the interference. Nextel and Verizon agreed immediately. After several months of resistance, Cingular also joined the effort.

While seeking to address the problem of their dead zones, the County sought to avoid the creation of any new dead zones. They, therefore, adopted a land use approach to the problem (wireless zoning ordinance) that required advance coordination by the carriers to prevent interference to public safety radio. Cingular challenged the ordinance as an unlawful attempt by a local government to regulate in a field for which Congress had granted the FCC exclusive jurisdiction. In an FCC staff decision released in July of 2003, the Commission agreed with Cingular and preempted portions of the County ordinance.

The FCC did order the carriers to "cooperate" with the County to mitigate interference.

The County has appealed the staff's decision to the full FCC, and that appeal remains pending. The carriers have continued to cooperate as ordered. Unfortunately, the 20 remaining

dead zones are unlikely to disappear altogether. The County estimates that eight will remain until its planned system expansion and upgrade is completed in several years. Even when the upgrade is finished, four "intractable" sites are likely to remain unresolved.

While it is possible that the FCC's decision in the 800 MHz rulemaking will finish the job of interference reduction, no decision is expected until 2004, if then. That would mean that the County will have waited six years for a solution to their interference issue, and the only solution may be for the public safety community to move to a different area of the spectrum. What is worse is that the FCC hampered the County's efforts at self-protection and gave priority to the commercial users of the spectrum.

V. SOLUTIONS

In addition to continued education of decision makers at the federal, state and local level on the issues of interference and interoperability, NACo and TeleCommUnity believe that there are at least three elements to addressing these dual challenges:

- Additional interference-free spectrum;
- Adequate and assured funding; and
- Increased coordination at the federal and local levels including a focus on open standards.

I would like to take a moment to address each of these three solutions.

A. Radio Spectrum

In its final report, the PSWAC concluded that "unless immediate measures are taken to alleviate spectrum shortfalls and promote interoperability, public safety agencies will not be able

to adequately discharge their obligation to protect life and property in a safe, efficient and cost effective manner."

PSWAC asked the FCC to allocate additional spectrum for the exclusive use of public safety agencies. The radio frequencies currently set aside for public safety use are primarily in four areas of the spectrum and range from low band VHF (25-50 MHz) to 800 MHz (806-869 MHz). As a result, no universally available or affordable radio can handle all possible combinations.

In addition, many mutual aid channels have been set up on a regional or statewide basis.

Research conducted for the PSWAC's Operational Subcommittee concluded that one of the top priorities for public safety communications is the need to operate across frequency bands (e.g., from VHF to 800 MHz). Communications across bands is possible through "patching," but the process has serious limitations and complications. PSWAC determined that more than 100 MHz of spectrum is needed for public safety, yet public safety agencies currently have only 30 MHz of spectrum. It would be in the public interest to increase the number of nationwide interoperability channels. *To accomplish this, however, there is a need for greater allocation of radio spectrum dedicated to public safety use.*

Congress authorized the FCC to reassign spectrum between UHF television channels 60 through 69 in the 700 MHz range for public safety use. This spectrum was to be available for licensing in the year 2000. However, at the urging of broadcasters, Congress included a

provision in the legislation that may delay indefinitely the availability of that spectrum in some regions. Some broadcasters may never relinquish the frequencies if the penetration of digital television service remains below specified levels in individual markets.

Representative Jane Harman introduced H.R.1425, the HERO Act to set a firm date for the broadcasters to relinquish the spectrum. Under the HERO Act, broadcasters must clear the spectrum by the end of 2006. TeleCommUnity, NACo and all the major public safety associations support this legislation[13]

To date, the FCC has allocated 24 MHz of spectrum in the 746-806 MHz range for public safety use. *An additional 73.5 MHz is needed now to meet interoperability and capacity needs.*

B. Adequate Funding

According to the study conducted by the National Institute of Justice, limitations in funding already affect interoperability for 69 percent of all agencies surveyed. Wireless communications systems are becoming more complex and costly at a time when revenues are shrinking. Currently, only densely populated metropolitan areas are implementing new systems.

The federal government has decided to auction the 800 MHz spectrum for commercial uses. This has created interference problems within the portion of the 800 MHz spectrum previously used for local public safety communications. Not only has the FCC not remedied interference in the 800 MHz spectrum, but federal authorities also are proposing a new auction in

[13] Both TeleCommUnity and NACo support H.R. 1425, Rep. Harmon's "HERO" legislation and would request that all the Members of the Government Reform Committee join her efforts by co-sponsoring the legislation.

the 700 MHz spectrum.(I respectfully suggest that unless the mixed public safety and commercial uses are adequately separated, the 800 MHz interference problems may be replicated.) NACo and TeleCommUnity believe local communities should receive a portion of the federal revenues from wireless spectrum auctions to enhance interoperability and address interference through the spectrum relocation of local public safety communications systems.

Compared to the billions generated by a federal spectrum auction, the aggregate cost of new equipment to enable public safety interoperability should be minimal. The federal government should allocate an appropriate share of the spectrum auction money to address local government efforts to protect the health, welfare, and public safety of their citizens.

1. Public Safety Spectrum Trust Fund

My work with PSWN, NTFI and CapWIN has convinced me that a federal funding mechanism, separate and apart from the annual appropriations process, is needed to support interoperability. The federal government is subject to many of the same budget challenges we have at the local level. Technology investments and/or upgrades in equipment are often some of the first things to be cut in tight budget times. My recommendation is that this "Public Safety Spectrum Trust Fund" would be funded by the proceeds from the sale of public spectrum to private interests, like cellular phone companies and used to assist local governments fund interoperability projects.[14]

[14] I have already noted TeleCommUnity and NACo's very strong support for Rep. Harmon's "HERO" legislation.

C COORDINATION AND NATIONAL STANDARDS

I also share PSWN's feeling that improving interoperability requires local, state, and federal decision-makers active participation in the development of open standards to ensure compatible technologies and competitive markets. Public safety personnel often cannot talk to each other because their equipment comes from competing manufacturers who have sought to protect market share by not building on an open standard.

Congress and the FCC should examine what role they might play in encouraging manufacturers to build equipment that complies with open standards.

We at the state and local level can do our own part to encourage such open standards through our procurement policies. We must also participate in standards development efforts.

VI. SPECIFIC ISSUE AREAS

In inviting me to testify here today, the Committee asked that I provide insights into a number of specific issues including:

- What is the role of organizations such as NACo & TeleCommUnity in addressing interference and interoperability;
- What type of role can regional partnerships such as CapWin play;
- Could I share local government's thoughts on Project SAFECOM; and
- Is there a technological fix to issue of interoperability?

A. Role for TeleCommUnity, NACo and others.

The National Association of Counties has long viewed its role in this area as one of education. My fellow elected officials are often not familiar with the technical aspects of interoperability and interference. They, therefore, are not always prepared to ask the right questions and might be swayed by solutions a vendor or even our procurement officers suggest from the voice component of interoperability. This can result in a failure to appreciate the migration to, and growing importance of, data sharing.

NACo feels that this issue is so important that it is actively pursuing grant funding in this area so that we can do more to provide technical assistance to counties in a number of homeland security areas, including interoperability.

NACo has also invested substantial time and effort to ensure that as a group county officials' voices are heard and understood on this issue. This commitment is reflected in having three participating members of the U.S. Department of Justice's National Task Force on Interoperability, of which I was one. NACo is also represented on the SAFECOM Executive Committee.

We also recommend the use of Public Safety WINS: Wireless Interoperability National Strategy, developed by the PSWN Program. This tool is of assistance as local governments pursue solutions to the technical and policy challenges to improving interoperability.

B. CapWIN

The benefits of coordinated communications that are broadly and actively shared at all levels of government are beginning to be realized in the Washington metropolitan area with the CapWIN Project.[15] Local, state, and federal agencies have formed a working group to coordinate interoperability activities, and to develop and enact appropriate policies or executive orders. CapWIN is also deploying a shared state-of-art wireless integrated mobile data communications network to support federal, state, and local law enforcement, fire and emergency medical services (EMS), transportation, and other public safety agencies primarily in the Washington, DC Metropolitan area.

The purpose of CapWIN is to enhance communication and messaging systems through a "communication bridge," which allows mobile access to multiple criminal justice, transportation, and hazardous material data sources. It is also the first multi-state, inter-jurisdictional transportation and public safety integrated wireless network in the United States.

We hope that the lessons and model of CapWIN proves a success that may be replicated, where appropriate, around the county.

[15] The CapWIN Project is sponsored by the U.S. Department of Justice, Office for Domestic Preparedness, the Maryland State Highway Administration, the Virginia Department of Transportation, the U.S. Department of Transportation (FHWA), the National Institute of Justice, Office of Science and Technology and the Public Safety Wireless Network (PSWN)

C. PROJECT SAFECOM

The Committee also asked that I provide my feelings on the prospects for success at SAFECOM. I attended my first SAFECOM meeting this past Monday and I believe that we are moving in the right direction. This was, however, not always the case.

Project SAFECOM started out as a federal "top-down" solution to interoperability. In my opinion it was doomed to fail because first responders and local elected officials were not at the table. We were told that FEMA would look after our interests.

It was only after many months of intense discussions between the associations of local elected officials, first responders and the federal agencies that OMB and others came to understand that SAFECOM could only be successful if state and local partners were at the table.

The success of SAFECOM is yet to be judged, but with all the players at the table as potential equals, the long and arduous process of achieving regional, if not national interoperability may have just begun. It would also be my hope that the first products of SAFECOM would be the coordination, if not reduction, of the numbers of well-intentioned federal initiatives.

D. Role of Technology

Local government officials would be making a serious mistake were we to attempt to define what the technology fixes are for interoperability. As I said previously, national standards for open platforms are needed, but I believe this to be more a policy debate than a technology debate.

Since the Committee did ask me my opinion regarding the state of technology, I will offer my personal opinion. I believe that there are existing technologies to bridge most of the interoperable gaps in voice communication – solutions that are relatively inexpensive, but less than optimum. For data interoperability, the use of XML and other data normalization techniques can assist in making differing jurisdictions' legacy systems work together, but that too is no panacea. Encrypted wireless technologies need further development and with the utilization of new spectrum for personal communication devices, there are opportunities for improving both voice and data interoperability.

VII. CONCLUSION

There are no perfect "national" solutions to interoperability. The nuances of each region are too complex for a "one size fits all" approach. The biggest need to achieve interoperability is funding for a well planned, sustained effort over several years. Quickly throwing large sums of cash at jurisdictions in a short time frame with the goal of improving interoperability is actually counterproductive. The largest challenges for local governments is understanding the nature and limitations of their existing systems in achieving interoperability, determining the options, and then developing an engineering plan and migration strategy to a new interoperable system if necessary. This requires a great deal of education for local elected officials in some very technical matters as well as the availability of the necessary financial resources, interference-free spectrum and standards, which promote competition.

Thank you and I welcome your questions.

Mr. PUTNAM. Thank you, Councilwoman.

Our next and final witness for this panel is George Ake. Mr. Ake is program director for the Capital Wireless Integrated Network [CapWIN]. As most of us know, CapWIN is a project whose goal is to implement an integrated voice and mobile data network for transportation in public safety in the Washington, DC area. Prior to managing CapWIN, Mr. Ake served 6 years as director of research and planning for the North Carolina Highway Patrol. He is a graduate of Guilford College and received his MPA from North Carolina State. The interoperability issues facing Mr. Ake at CapWIN are perhaps a microcosm of the tremendous challenges we face nationally, so we look forward to hearing your remarks today, Mr. Ake.

You are recognized.

Mr. AKE. I am glad to be here with you, and I want to tell you what CapWIN is briefly before I start. And I would like to summarize my remarks.

CapWIN enables first responders and incident management personnel from different organizations to communicate securely despite different systems. It is based on Internet protocol; it is based on a new way of doing business. We are using data now and hope to move to voice in the near future.

Over 40 agencies are participating, and they are able to share information and get information they have never been able to get before. One of the most exciting things is to see multi-disciplinary people communicating, like transportation talking to law enforcement, fire talking to transportation.

CapWIN is a true partnership. What I mean by that, we are working on an interstate compact between Maryland, Virginia, the District, and the Federal Government to share information. I go around the country, and as I speak I have a sandbox example. I have three little girls in a sandbox, and I said if we could all learn to play like these three little girls are in this sandbox, we would really be a lot better off. I believe we have to change the way we are doing business in the future. That means local governments, State governments, and Federal agencies need to sit down in the same sandbox and learn to play together.

We leveraged the investments we already have. If local governments build a wonderful system, it is absolutely crazy to throw it out; we need to use that system. And that is what we are trying to do, we are trying to bridge between those systems and enable them to use the investments that they have already done.

Standards is a problem for us. When we started looking at CapWIN, we started looking at the standards and, frankly, it was very frustrating. Many agencies are doing standards and there seems to be no one agency coordinating this, so there is a need to look at the standards issue.

Multi-year Federal support is essential for programs like CapWIN that go across multiple States. It takes time to develop partnerships. It takes time to develop trust. It takes time to develop government systems. We are also getting a lot of calls from around the country. Our representing project, AGILE with the National Institute of Justice, ODP, and also SAFECOM, we have been going around the country talking to people about what we have

learned and the lessons that we have learned and the mistakes that we have made. It makes no sense for us to learn something and not share that. Or if we make a mistake, why let someone step in the same home? It just doesn't make sense. So there is a need to share lessons learned; there is a need to share wins as well as mistakes.

End users must help design these systems. I am amazed sometimes when I see people who have the solution, yet they have never talked to anybody on the street that did it. We try to use that in developing this system. We have users, people on the street, come in and help us design this thing.

And I would say to you, based on 30 years in law enforcement, if they don't use it everyday, when you have the terrorist thing, they won't know how to use it. We have to build systems they use everyday. I am amazed when I look at the system around D.C. I come from North Carolina, a small community. But the traffic, if you have a major incident on the Woodrow Wilson Bridge, it is a major problem here in D.C., and we need to learn to do that. So we have to use it everyday.

Public safety agencies need to help sorting out all this information; what do we mean by IT, what do we mean by all these things. SAFECOM, I think, can help that by having some place that people can call and get information. Certainly spectrum is a big issue. Spectrum is a big issue that we need to address.

Do we have everybody playing in the sandbox now at CapWIN? I would say to you no, but we have most of them. One of our vice chairs, Marilyn Praisner, said as one example that is working with us to move forward.

In closing, I want to say to you in 1975 I had to go tell Trooper Tom Davis' wife and his two boys he wouldn't be able to come home again because he stopped somebody and he didn't have good information, and they killed him. I have never forgotten that. That is the hardest thing I have ever had to do. So we are talking about lives here. And I know all of you all are concerned, and that is the reason you are holding this hearing. I thank you for that, and I thank you for letting me come speak to you.

[The prepared statement of Mr. Ake follows:]

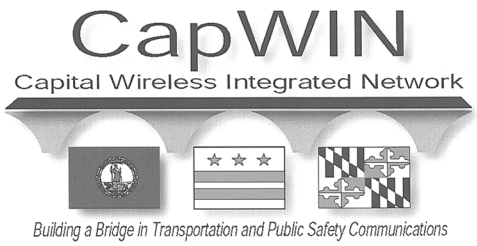
"First Responder Interoperability: Can You Hear Me Now?"

A Joint Hearing of the

Subcommittee on National Security, Emerging Threats, and International Relations

and the

Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census



Written Testimony

by

George Ake, CapWIN Program Director

November 6, 2003

Executive Summary

What is CapWIN?

The CapWIN system provides a "messaging hub that enables first responders and incident management personnel from different organizations to securely communicate mobile unit to mobile unit and coordinate activities by instant messaging, chat, and email despite differences in their respective mobile data communications systems. The system also allows secure, role-based access to critical information in other agencies' systems. Over 40 local, state and federal agencies comprise the existing CapWIN consortium.

Brief History

Strategic planning and laying the institutional foundation were the focus of CapWIN for the first two years starting in December 1999. In these two years, an ad-hoc organizational structure was created, a strategic plan was developed, a pilot test was conducted, and a procurement process to acquire systems integration support services was initiated and completed. In August of 2002, with the systems integrator on board (IBM Corporation), the CapWIN system design and implementation was initiated. In just over a year, the system foundation was designed and built and the initial system is currently being deployed among public safety and transportation users in the D.C. Metropolitan area.

Lessons Learned / Observations

CapWIN's governance is a true partnership between local, state, and federal agencies.

The CapWIN governance structure places emphasis on the importance of local jurisdiction participation in CapWIN's voting and deliberation structure. The governance model created has a strong and complete role for each and every local jurisdiction as well as the state and federal department/agencies who are currently members of CapWIN. This structure is based on a true partnership.

> "When people sit in the sandbox and play together you can see a lot of good things happening. [For example], Law enforcement traditionally didn't deal with transportation, but we brought them all to the table. The transportation representative told them 'I've got all this in my database', the law enforcement representative said, 'Man, I'd like to have that'. And all of a sudden people started working together. It's just a matter of getting them in the same room, letting them understand what each one of them had, and where they were coming from.
>
> - *George Ake, CapWIN Program Director*

To meet the needs of the twenty-first century, people need to put away old methods and practices and learn to "play together in the same sandbox for the common good of our citizens.

CapWIN leverages the investment in existing systems and provides critical functionality for agencies without an existing system.

"We're saying to the agencies with current systems, "you don't have to buy a new system. Here's an agency, for example, that spent millions of dollars on this new system. We can't ask them to throw it away. That would be crazy. If they don't have a system then we provide mobile technology. Even if we had the funds, we can't afford to build one system for everyone because it would take a long time for implementation and we would waste taxpayer dollars. And then you have to worry about retraining everybody and then reworking the way people do business. It's just not realistic. CapWIN bridges between the systems to provide inter-agency communications using the investments already paid by governments. When these systems need replacing then we should help agencies identify open systems based on standards. New systems should be built using current COTS software and systems.

- George Ake, CapWIN Program Director

CapWIN is sharing "lessons learned" with agencies from around the country.

CapWIN staff has been working with the National Institute of Justice and SAFECOM to share information with agencies and regions throughout the country. The need for non-vendor information is critical throughout the U.S. Agencies need the ability to learn from their counterparts what has been successful and what has not.

Multi-year federally supported start-up funding is critical

The CapWIN Executive Leadership Group is working on long term funding issues. Complex multi-state initiatives such as CapWIN require several years of start-up funding to form trust-based partnerships, develop legal governance structures, and work together to plan, design, and implement an interoperable communications system. CapWIN would not exist without the federal funding support provided by congress. In the future, ongoing operations and maintenance support will largely be covered by state and local agencies;

however, continued federal support will allow the system to evolve to meet the need for new and innovative functionality that will allow emergency response agencies the ability to meet future incident response challenges.

Systems must be built with the end-user in mind and address everyday needs

It seems obvious, but systems are built everyday without taking into account the needs of the individuals that will use it. CapWIN's design process was built based on public safety and transportation user community input. In addition systems have to be used every day and not just for a terrorism event. Unless the system is used regularly, users will not know how to use it when a major catastrophic event occurs. CapWIN has been designed as a tool that can be used to support day-to-day incidents as well as major incidents.

Standards development needs to be coordinated at all levels

Many Federal agencies and standards development groups are involved in standards development activities and it is very difficult identifying those that are pertinent to CapWIN and how to implement them. In some cases, standards development activities are overlapping making it evident that all standards efforts are not coordinated under a single unified organization or entity. This leads to a great deal of frustration from the state and local agencies that are trying to "do the right thing in terms of using standards in the systems the plan, design, and implement.

Public agencies need a place to go for technical advice and support

Public agencies need technical advice and support to build systems properly using the latest standards, technology, lessons learned, etc. Having easy access to this type of support can save dollars in the long run. CapWIN would support the creation of a Support Center perhaps under SAFECOM.

Public Safety Agencies need additional spectrum

Several CapWIN agencies including Washington D.C. are currently looking at broadband solutions that could enable first responders and command centers to receive video and other large files. CapWIN has the ability to move these files but spectrum is limited.

CapWIN History

The Woodrow Wilson Bridge in the Washington, DC metro area spans the Potomac River connecting the Maryland and Virginia portions of the Capital Beltway. The bridge serves more than 190,000 vehicles each day and is one of the most heavily traveled in the country. On November 4, 1998 a 32-year old man, upset because of a domestic dispute, climbed onto the wall at the edge of the span about 1:07 p.m. and told construction workers on the ground below that he planned to jump. The Alexandria, Virginia resident stood on the bridge for more than 5 hours before jumping, causing incredible traffic tie-ups as the bridge was closed. Much of the Capital Beltway was brought to a complete standstill during the rush-hour period due to the confusion that ensued as emergency personnel from multiple jurisdictions responded to the incident.

Most of the traffic problems stemmed from the fact that the agencies responding to the incident did not have the ability to effectively communicate with each other. The Wilson Bridge is federally owned and considered part of the District of Columbia, even though there is no way to directly access the bridge from the District. The Potomac River, flowing below the bridge, falls under the jurisdiction of the State of Maryland while the individual threatening to jump was on the portion of the bridge that is approached from Virginia. As a further complication, response to incidents on the bridge may be performed by state-level agencies (the Virginia Department of Transportation or Maryland State Highway Administration), county-level agencies (Montgomery or Prince George's Counties in Maryland, Arlington and Fairfax Counties in Virginia), or by municipalities (such as the City of Alexandria).

Charles Samarra, Chief of Police for the Alexandria Police Department stated, "[This incident] brought the region to a standstill -- it was a transportation catastrophe. Part of the issue stemmed from the fact that emergency personnel on the scene had no way of communicating with each other via radio. Instead, officers sprinted back and forth across the bridge to deliver messages.

Currently, in order to transmit a message from a response unit in one agency to one in a different agency, responders must communicate with their respective communication centers and request that they phone their counterpart agency's communication center in order to have them relay a message to their respective unit on scene. This fragmented and indirect communication takes time and adds unnecessary delay in situations where every second counts.

Since responding agencies had no way to effectively communicate with each other, they were acting without knowing what their counterparts were doing. Thus, detours in one jurisdiction led to dead-ends in others. Back-ups stretched for miles. Some motorists sat in their cars for more than 6 hours without moving.

While this incident was by no means unique to the types of incidents that have occurred in the Washington D.C. region well before it, it happened to be the one that spurred two agencies – the Maryland State Highway Administration and the Virginia Department of Transportation – to initiate the planning and activities that led to the creation of CapWIN. A because of the events of September 11, 2001, the definition of a major regional incident changed forever further solidifying the partnership between the State of Virginia, State of Maryland and the District of Columbia and their mutual goal to develop an interoperable communications system for the region. The Capital Wireless Integrated Network (CapWIN) will be the first multi-state transportation and public safety integrated wireless network in the United States. It is designed to provide firefighters, police, transportation officials and other authorized emergency personnel with wireless access to multiple data sources during critical incidents. Improved access to information will help these 'first responders' and public safety officials make vital public safety-related decisions.

The CapWIN system is being designed to assist in alleviating confusion related to incompatible communication equipment and inaccessible information across agencies. Such a system will address frustrations experienced by emergency and other responding personnel and will allow a responding party to immediately (and simultaneously) contact other key personnel. To meet this challenge, representatives from more than 40 transportation, law enforcement and public safety agencies in the Washington area have come together to determine how technology can be used to coordinate incident management and share relevant information in a more accurate and time-sensitive manner.

CapWIN Overview

CapWIN has the potential to become a model for public safety and first responder information sharing, not only in the region, but nationally and internationally as well.

Initially, CapWIN will provide three critical capabilities:

- Furnish a mobile data communications capability to agencies that do not currently have it;
- Provide mobile access that will allow authorized users to instantly obtain criminal justice, transportation, and hazardous materials information; and
- Achieve interoperability between existing incompatible mobile data communication systems.

To facilitate system expansion, development, and maintenance over the long term, the CapWIN system has been designed using a standards-based technology approach for communications, software, and interfaces to external databases and systems. A crucial feature of this standards-based technology is the ability for CapWIN to leverage the investments of agencies that have already purchased mobile data communication systems. The primary components of the system include field hardware (e.g., notebook computers and handheld devices); the CapWIN client software that runs on these devices,

and the backend system that ties the hardware, software, and external system interfaces together. The system makes extensive use of general purpose, commercial, off-the-shelf products that are widely available, well supported, broadly understood, and easily maintained. Because the bulk of the software is located on servers, users only need a web browser to use CapWIN. Given that CapWIN uses proven Internet technologies, the solution will have the advantage of benefiting from the tremendous research and development that private industry is currently investing in these technologies. Further, the system will be able to use new wireless technology as it is introduced, without the need to rework existing applications.

CapWIN Progress

The CapWIN project has made extensive progress in a very short time period. Following is a summary of accomplishments since January 2002 when Congress provided $20 million in funding to the CapWIN project to advance it from a concept to an operational system.

- A governance structure has been established that represents Federal, State, and local public safety and transportation agency stakeholders in the CapWIN system. The approved structure places emphasis on the importance of local jurisdiction participation in CapWIN's voting and deliberation structure. The governance option selected has a strong and complete role for each and every local jurisdiction as well as the state and federal department/agencies who are currently members of CapWIN. The current governance leadership team consist of:

    - Charles Samarra, Chief, City of Alexandria Police Department
    - Margret Kellems, Deputy Mayor for Public Safety, Washington, D.C.
    - Ed Plaugher, Chief, Arlington County Fire Department
    - Marylin Praisner, Councilwoman, Montgomery County, Maryland
    - Mr. Michael Byrne, Department of Homeland Security
    - Secretary John Marshall, Virginia Department of Public Safety

  The organizational structure also includes technical and operational working groups representing participating agencies.

- Shared lessons learned with transportation and public safety agencies throughout the country.

- The John F. Kennedy School of Government has developed a case study to be used in their E-government seminars next year. This case study focuses on CapWIN's multi-state partnership/governance and the use of open internet based technology.

- The program has garnered the participation and support of over 40+ Federal, State, and local agencies representing, public safety and transportation agencies in the Capital region.

- Held summit at FBI Clarksburg, WV facility and reached agreements for regional criminal justice information sharing with representatives of Virginia, Maryland, and the District of Columbia.

- Established CapWIN office in Greenbelt, Maryland and created staff structure for planning, development, and operational support of the system. This facility houses the CapWIN network operations center (NOC).

- Completed RFP process and contract with system integrator for planning, design, and implementation of the CapWIN system.

- Established contractual relationship with International Association of Chiefs of Police (IACP) and the International Association of Fire Chiefs (IAFC) to conduct user needs assessments and policies and procedures for information sharing.

- Established contractual relationship with George Mason University to survey governance models, draft by-laws, and conduct institutional issues evaluation.

- Established contractual relationship with University of Virginia to gather transportation user needs, provide technical support related to transportation system data access and system interfaces.

- Conducted user needs assessment & design workshops with operational level representatives of law enforcement, fire, EMS, and transportation agencies in the Capital Region.

- Identified need for, and acquired through NIST, a standards manager position to ensure adherence to, and promulgation of, national public safety and transportation IT standards.

- Completed initial system design and started system implementation (see details below).

- Currently in the midst of focused beta release of software involving 50+ field units representing over 15 Federal, State, and local public safety and transportation agencies in areas where multi-jurisdictional and interagency coordination and communication has been a problem.

- The current system implementation will support 10,000 concurrent (simultaneously logged in) users representing the entire public safety user base in Maryland, Virginia, and the District of Columbia.

CapWIN System Implementation Progress Details

The following list of tasks are included in Phase 1 of the CapWIN project. All tasks below are covered by Phase 1 funding (through July 2004) unless otherwise noted.

Task 1 – Core Infrastructure

Beta testing is underway for the first task of CapWIN. This task includes:

- Law Enforcement Queries:
  WALES, MILES, VCIN, NCIC, NLETS
- Incident Management Support
- Messaging/Email
- Security
- Automatic Notifications
- Ability to locate first responders by location or discipline

Task 2 – Transportation and Hazmat Database access

- Design work completed
- Design allows for two types of transportation database functionality:
  - Query by location - User goes to "view transportation page where all event and road sensor information is available
  - Traffic Alerts - Agency administrator selects criteria by which members of that agency receive an "alert (flashing icon and sound) based on severity of event or other factors
- Current design will allow users to view streaming video (if sufficient bandwidth on client side) from any Maryland, Virginia, and D.C. transportation agency system
- Current design will allow access to Hazmat data sources to provide:
  - Query access to the Emergency Response Guide
  - Query access to truck and train carrier manifests
  - The ability to forward the results of the above queries to CHEMTREC (American Chemistry Council's Hazmat emergency response service) and immediately open a chat session with a Chemtrec operator
  - The ability to email the results of the above queries to others responding to an incident

Task 3 – Development of standards-based CapWIN interface and the Integration of existing Mobile Data System

- CapWIN interface will most likely be based on a web services model and will be based on Global Justice XML data model version 3.0, IEEE 1512 and other widely accepted standards
- CapWIN interface will be published and available for other states / agencies / projects to adopt or incorporate into future RFPs
- CapWIN's first use of the interface will be to connect Alexandria City Police Department's existing Mobile Data System

CapWIN has received approval from its Executive Board to explore and pursue funding for the following tasks:

- Implementation of a fully-functional back-up facility in Northern Virginia
- Integration of other existing Mobile Data Systems in the Capital Area
- Pilot of integrating Voice-over-IP into Global Directory to provide "laptop-to-laptop voice communications
- Exploring the integration of Computer Aided Dispatch (CAD) systems into the CapWIN framework
- Integration of Geographic Information System (GIS) and mapping functionality to provide resource location information and real-time intelligent routing to CapWIN users

CapWIN has received approval from the Executive Board to partner with the following programs:

- **"9-11 Connection Initiative"** A pilot program to connect and share information from the criminal justice databases in New York, Pennsylvania, Maryland, and the District of Columbia. This partnership will use the CapWIN network to deliver critical information to a mobile unit and some agencies.

- **"Regional Pawn System"** This system would be housed at the CapWIN Network Center and would provide information on pawned items in the Washington Region. This database would enhance criminal investigations and help recover stolen property. The pawn system would take advantage of the existing CapWIN network.

CapWIN Funding Summary

Federal Fiscal Year (FFY) 1999:

USDOT Intelligent Transportation System (ITS) Integration Program	$500,000
Maryland State Highway Administration[1]	$300,000
Subtotal	$800,000

Federal Fiscal Year (FFY) 2000:

USDOT Intelligent Transportation System (ITS) Integration Program[2]	$1,600,000
National Institute of Justice[3]	$638,692

[1] Federal Highway Administration Federal-aid Funds (matching)
[2] $400,000 of the $1.6 million went to George Mason University through VDOT
[3] Funding provided for staff positions at UMD/CATT. Does not include other staff support provided by NIJ through other sources (initial -$438,692, supplemental - $200,000)

Maryland State Highway Administration	$600,000
Virginia Department of Transportation[4]	$600,000
Subtotal	$3,438,692
Federal Fiscal Year (FFY) 2002:	
Department of Justice Office of Justice Programs[5]	$20,000,000
Subtotal	$20,000,000
Total	$24,238,692

Funding Notes:

FFY 99 funding went to the University of Maryland Center for Advanced Transportation Technology to conduct strategic planning in preparation for CapWIN implementation. An initial organizational framework was created as well as a number of documents including *Best Practices in Transportation and Public Safety Integration, User Needs Assessment for Transportation and Public Safety, Wireless Data Technology Survey, and CapWIN Strategic Plan.* In addition a pilot of the CapWIN concept was initiated to demonstrate a multi-jurisdictional vehicle-to-vehicle messaging capability.

FFY 2000 funds were used to begin implementation of CapWIN. The University of Maryland, on behalf of the CapWIN Executive Committee and Steering Groups, initiated and conducted the process of procuring a systems integrator that will build the CapWIN foundation infrastructure. Six vendors competed and the IBM Corporation was selected by the University's Technical Review Committee. On August 7, 2002, The MD Board of Public Works unanimously approved the awarding of the CapWIN Systems Integrator contract to the IBM Corporation. Initial functionality will include mobile connectivity to multiple state criminal databases, designed interfaces to transportation and HAZMAT databases, an interface to an agency with an existing mobile computing system, and mobile data communications capabilities for agencies that currently lack mobile computing.

FFY 2002 funds: $19,055,000 will be used to: install the CapWIN foundation system infrastructure; pay for build-out costs, leased office space and network operations facility; provide grants to IACP and IAFC; and to fund CapWIN staff positions. University of Virginia and George Mason each received $472,500 for supporting CapWIN related research.

DOJ Budget Update

The following charts reflect a high level budget update of expenditures and committed funds for the twenty million dollars provided by Congress. Funding received prior to FFY 2002 has been expended.

- Chart one represents USDOJ - NIJ categorical distributions in dollar amounts and individual percentages of the total funding.
- Chart two illustrates first year expenditures and second year commitments in dollar amounts and percentages of each respective category.

[4] State Funding

[5] DOD Supplemental Appropriations. Two year budget funding. 72% budgeted for systems integrator contractor. IBM bid for Tasks 1 –3 is $6.3 million. $950,000 of the $20m went to George Mason University and University of Virginia.

- ***Note that chart two shows funds expended in year 1 and committed for year 2. With the project now fully ramped up, projections indicate that funds will be nearly expended in most categories by June 30, 2004.***

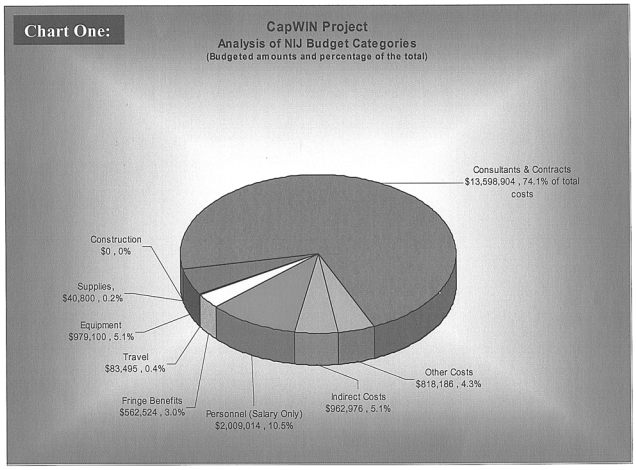
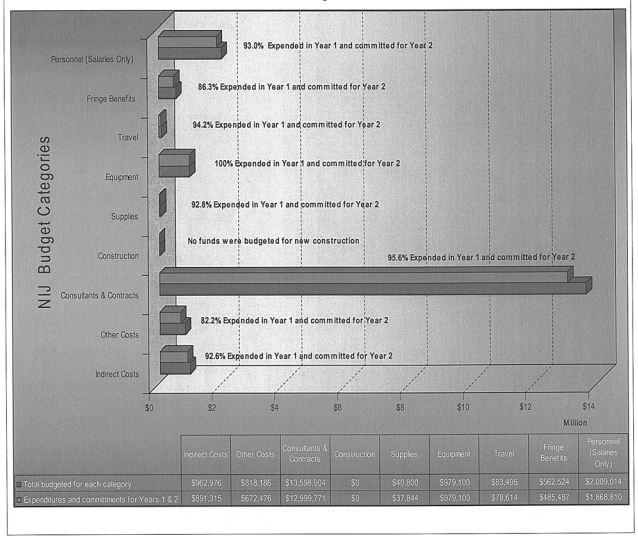


Chart Two:

CapWIN
Two Year Budget Overview



	Indirect Costs	Other Costs	Consultants & Contracts	Construction	Supplies	Equipment	Travel	Fringe Benefits	Personnel (Salaries Only)
Total budgeted for each category	$962,976	$518,186	$13,598,904	$0	$40,800	$979,100	$93,495	$562,524	$2,009,014
Expenditures and commitments for Years 1 & 2	$891,315	$672,476	$12,999,771	$0	$37,844	$979,100	$78,614	$485,487	$1,868,810

GEORGE S. AKE

5000 College Ave. College Park, Maryland 20742. 301-403-4601

OBJECTIVE

To work with government agencies using my education and experience to prepare for the challenges of the new millennium

EXPERIENCE- UNIVERSITY OF MARYLAND

Coordinator, Capital Wireless Integrated Network *1999- present*
Responsible for: Overall coordination of a project to implement an integrated voice and mobile data network for Transportation and Public safety in the Washington D.C. Region

EXPERIENCE-NORTH CAROLINA HIGHWAY PATROL

Major, Director of Research and Planning *1993-1999*
Responsible for: Accreditation; Information Management Unit; Medical Services; Promotional System; Research and Planning Section

Director of Specialized and In-service Training *1985-1993*
Responsible for: *Career Development, In-service training and Specialized Training*

District Commander (Wilmington) *1981-1985*
Responsible for: *field operations in two counties*

Trooper and First Line Supervisor *1966-1981*
Worked in Field Operations and staff positions

EDUCATION

NORTH CAROLINA STATE UNIVERSITY, RALEIGH, NORTH CAROLINA
MASTER'S OF PUBLIC ADMINISTRATION, *MAY 1996*

GUILFORD COLLEGE, GREENSBORO, NORTH CAROLINA
B.A.S., ADMINISTRATION OF JUSTICE, *1980*

SENIOR MANAGEMENT INSTITUTE FOR POLICE, BOSTON, MASS., *JUNE 1995*

SOUTHERN POLICE INSTITUTE, LOUISVILLE, KENTUCKY
ADMINISTRATIVE OFFICERS COURSE, *1981*

STEDMAN HIGH SCHOOL, *1963*

PROFESSIONAL AND CIVIC ORGANIZATIONS

- Southern Police Alumni Association
- North Carolina Southern Police Alumni Association
- Honorary member Virginia Southern Police Alumni Association

- Past National Secretary, Southern Police Alumni Association
- Past President, North Carolina Southern Police Alumni Association
- N.C. State Administrative Officer's Management Program Advisory Board
- Information Management Committee, Governor's Crime Commission
- UNC School of Medicine Law Enforcement Advisory Board
- Past member, National Institute of Justice Technology Advisory Board
- IACP-Police Traffic Services in the 21st Century Subcommittee
- IACP- Communications and Technology Committee
- National Institute of Justice -National Task Force on Interoperability (2002)

AWARDS

- Dean's Scholar, University of Louisville, 1981
- Distinguished MPA Alumnus Award, N.C. State University, 1998

PROJECTS

- ***National Task Force on Interoperability*** ***2002***
  Developed recommendations for public safety agencies to assess their communications needs and encourage sharing of information. These recommendations focused on enabling public safety agencies to communicate with each other. A published guide is available for the agencies.

- ***IACP Police Traffic Services Study Group*** ***1999-2000***
  Developed recommendations for police executives to improve and enhance traffic law enforcement in the next century. The recommendations included management and administrative changes, technology, and community involvement. The published guide will be available for law enforcement agencies throughout the United States.

- ***Criminal Justice Information Network*** ***1997-1999***
  Worked with the Governing Board making presentations on the concepts of a shared network. Presentations have been made to members of the North Carolina General Assembly, U.S. Congress, International Chiefs of Police, and other professional organizations. Worked with the "CJIN" board to identify new technologies for all Criminal Justice information systems. Routinely meet with local law enforcement officers, court, and correction officials to discuss strategies for cooperation and sharing of resources.

- ***Operation Helping Hand*** ***1996-1999***
  Developed a regional policing program to address high crime areas in North Carolina. This program (Operation Helping Hand) is a partnership between State law enforcement agencies and Local Police to address high crime areas. A federal grant provides for overtime salaries for enforcement officers and resources for the community.

- ***Highway Patrol Promotional and Hiring processes*** ***1994-1999***
  Developed and validated new promotional and hiring systems for the North Carolina Highway Patrol. These systems are a national model for other agencies.

- ***National Hiring and Promotional Summit*** ***1994***
  Developed a national summit for Highway Patrol and State Police Organizations. This summit is now an annual event hosted by State Police organizations to exchange methods and ideas to improve promotional and hiring systems.

- ***Highway Patrol Medical Services*** ***1992-1999***
  Developed a partnership with the University of North Carolina Medical School to provide medical services for several state law enforcement agencies. This program has reduced medical costs and provided excellent care for approximately 2000 officers. This program includes stress debriefing, routine physical exams and proactive medical strategies to prevent illness. The Medical School has established an advisory board of experts, which develop new and innovative medical programs for law enforcement officers.

- ***Administrative Officers Management Program (NCSU)*** ***1988-present***
  Worked with North Carolina State University and North Carolina Law Enforcement Leaders to start an Administrative Officer Management Program in North Carolina. This program has graduated five hundred and twenty-three officers form fifty-four North Carolina police agencies and one hundred and fifty-three officers from other states and countries. The program is designed to expose officers to management methods and new trends in law enforcement. This program has an advisory board made up of law enforcement leaders throughout the state.

Mr. PUTNAM. Thank you, Mr. Ake.

I thank the entire panel for your valuable input. You have added greatly to this dialog and even generated questions that I know will be reflected in the second hearing with the Federal officials.

For logistical purposes, we need to wrap up this first hearing by 11:45 so that we can seat the second hearing in time to complete that work and clear the room for the full committee's business meeting. So I will allocate 5 minutes to Chairman Shays, 5 minutes to the minority, and following that we will go to 3 minute rounds of questions for the rest of the Members, and that should allow everyone to participate and still keep us on track.

So with that I will recognize Chairman Shays for 5 minutes.

Mr. SHAYS. You know, I am going to defer to Mr. Janklow and give him my 5 minutes.

Mr. PUTNAM. Very well.

Mr. JANKLOW. Thank you very much, Mr. Shays.

And, Mr. Chairman, I am going to ask some leading questions because it saves me time, if I can.

National standards versus salesmen. Do you all agree that right now we have thousands of local first responder agencies that really are tied to the salesmen and women who are selling this stuff to them, and we need to establish a national standard around which they make their purchases? Are there any of you that disagree with that?

One, two. Do you agree that systems that are put in place need to be trunked, that people have to have the ability to have trunk systems throughout their jurisdictions? Are there any of you that disagree with that?

Mr. SHAYS. I think for the record we better, claiming my time a second, make sure that there is an answer that we can record.

Mr. JANKLOW. Go ahead, Ms. Ward.

Ms. WARD. Marilyn Ward, NPSTC. Trunking is very spectrally efficient, and I would say that you are able to get a lot more people on the same system, but there are a lot of rural areas where trunking would not really be something they would have to do. If you are in a rural area and you only need one frequency, it is a waste of money to trunk it.

Mr. JANKLOW. But to the extent that you have a system that has land lines connecting your towers, then it is just a matter of how many channels you have available in a rural area; isn't that correct?

Ms. WARD. With multiple channels.

Mr. JANKLOW. Yes, ma'am.

Ms. WARD. For a lot of users, trunking is the way to go.

Mr. JANKLOW. And in some States the 700 and 800 frequencies won't work because of the distance that those megahertz travel as opposed to things that are lower in a high band area, like 150 or 450.

Do you all agree that the exact frequency isn't nearly as important as the interoperability of the system?

Ms. WARD. Correct.

Mr. JANKLOW. The lady from Maryland indicated it took 6 years to solve a problem. World War II only lasted 3 years for us, and yet it took twice as long as World War II lasted for America to

solve a problem of operability within dead zones in the State of Maryland.

Ms. PRAISNER. Congressman, I am sorry. If I left that impression, I would like to be able to correct it. It has not been solved. I said that if the FCC moves in 2004, it would be 6 years since Anne Arundel identified the problem.

Mr. JANKLOW. So it may last as long as the Vietnam War before it is done.

Ms. PRAISNER. The problem has not been solved.

Mr. JANKLOW. OK. And if I could, with respect to the FCC, am I correct that because of the way they have allocated channels historically, there are different parts of the spectrum that are set aside for agencies? For example, the American railroad industry has a large block of channels in the 150 area that they don't use, and they are not willing to give up to anybody, and because of the system, am I correct, Mr. Jenkins, the way the system operates in the FCC, it is not their fault, but their procedures make it virtually impossible for anybody to come in in any reasonable amount of time and get their hands on the frequencies until the railroads decide to use them 200 or 300 years from now?

Dr. JENKINS. Basically, yes. Part of it is just basically that the rulemaking process is not a quick process, and FCC has a certain rule process with things, and it is not speedy.

Mr. JANKLOW. And to the extent that Congress could speed up, by legislation, the rulemaking process in this specific area, am I correct, folks, it would be a godsend for the problems that this country faces? Are there any of you that disagree with that?

With respect to Federal agencies, the ANSI 25 standard, is that an open architecture, or is that still controlled by Motorola?

Ms. WARD. That is an open ANSI 102 standard, where there are several manufacturers that are building.

Mr. JANKLOW. So E.F. Johnson makes it and the old General Electric, I can't think of what they are called now, but the old GE.

Ms. WARD. The old GE is Maycom, and they are looking at phase two.

Mr. JANKLOW. OK. And with respect to Federal agencies, for example, the Federal Forest Service, they operate on 150, and they are not willing anyplace in America to go on other first responders' frequencies because they claim they have to have the ability, when they move their people from State to State, they have to have the ability to communicate. So when you have fires in California and firefighters come from all over the country, they come with radios that can't work with the California authorities, isn't that correct? And it is the same in your States.

I happen to live in a place in South Dakota that is 4 miles from the Iowa border and 3 miles from the Minnesota border. To the extent that we have a crisis or an emergency, northwest Iowa responding to southwest Minnesota just magnifies the problem with respect to the crisis that we are having.

My time is up, Mr. Chairman, but what I would like to say is this panel is phenomenal in the testimony they gave. Every one of them makes sense. We ought to wrap it all together, put it in legislation, and mandate it, because Congress has created this problem with the laws that we passed and those we failed to pass to deal

with this, so we have allowed this to become this type of problem. I can tell you, Mr. Chairman, Somalia and chad will have, 2 years from now, better interoperability and better emergency first responder communication than we do because they don't have an entrenched system in place that has to be dealt with.

Am I correct, folks? They don't have an entrenched system, so they are going to build a new system that is wireless that handles the things that we in America can't handle.

Thank you for yielding your time to me, Mr. Shays.

Mr. PUTNAM. Thank you, Governor, and you are going to get your next bite at the apple in panel two, when you can have the Federal folks, and I am sure they are all anxiously awaiting.

Mr. JANKLOW. I hope the BIA is here, the National Park Service is here, and the Forest Service is here, and ATF is here.

Mr. PUTNAM. Very well.

The gentleman from Missouri, Mr. Clay, unless you want to give your time to Governor Janklow too.

Mr. CLAY. I may just yield that to Governor Janklow. Let me ask a couple of questions, and if there is time after, I would love to give it back to him.

The term interoperability may not be easily defined or grasped. Incidents requiring interoperability of public safety, communications for first responders can occur over a range of scenario from responding to daily mutual aid events to major events such as the Olympics that occur over days or weeks. The term first responder also appears to be evolving to include more professions, such as health departments and other professions besides the traditional first responders such as police and fire.

Question: How do you define interoperability and who is a first responder?

Perhaps, Dr. Jenkins, you may want to tackle it.

Dr. JENKINS. Well, we tried to define that in the statement, that is, that in our view, interoperability is the ability to exchange voice or data information in any situation in which first responders need to coordinate their actions, and need to be able to do that in order to coordinate their actions. You know, but we also point out that the definition of first responder is basically situation-specific. You don't need the same people responding, necessarily, to a car accident that you do to something like September 11th. And they may include, also depending on the situation, first responders can include private entities. For example, in some jurisdictions, first responders themselves are private contractors, that is, the local governments contract with them for public services. It is very important to be able to coordinate if there is an attack on an electrical grid or something to be able to coordinate with private entities.

So I don't think there is a clear hard and fast definition for first responder. I think the Homeland Security Act has a generally good definition that it uses that is a fairly broad definition. I do think that one needs to think beyond the traditional sort of fire-police-emergency medical service notion when you think of first responders and who needs to communicate with one another.

Mr. CLAY. Anyone else want to try to tackle it? Yes, Ms. Valicenti.

Ms. VALICENTI. I would say that first responders now include almost all disciplines that can in fact mitigate an event or an attack, and that very clearly is going to include any bioterrorism attack, more medical folks probably than we have ever seen before. And I would suggest to you that 911 is also a first responder; it is the first of the first responders.

Mr. CLAY. Thank you.

For Councilwoman Praisner, good morning. Let me ask you do you feel the Federal Government has done enough to reach out to local officials in their individual efforts to reach first responder interoperability?

Ms. PRAISNER. Sir, with all due respect to the Federal agencies, it depends upon which agency and it depends upon what level and it depends upon what issue. And I would say in general, if you put it all into one pot or Mr. Ake's sandbox, I would have to say no, the Federal Government as an entity has not adequately reached out to local government. And by that I would also add that it may very well be that relationships are established with public safety personnel and with the traditional elements, but not beyond that level, and certainly not with local elected officials. And it is the local elected official who has to raise his or her hand to say yes for a funding, and in tough times making decisions about one project or another, without the kind of information that you need, is also very challenging.

Mr. CLAY. So there is not a real formal relationship established between local and Federal.

Ms. PRAISNER. Well, I think there are through certain structures, and we are trying, as the National Association of Counties and I would say the League of Cities and the Conference of Mayors and our umbrella organizations, to participate, but I think at some level it is not the first group of folks that Federal agencies think of including in that dialog. Certainly that was the experience initially with SAFECOM. I think we are there now, and I tend to be an optimist looking at the glass half full. We are making significant progress recently.

Mr. CLAY. I see Ms. Ward with her hand up. I know that my time is up.

Can she answer, Mr. Chairman, please?

Ms. WARD. I would like to add to that that the National Public Safety Telecommunications Council has been supported by the AGILE program, which is a Federal initiative, and their mission is to support State and local public safety communications. So we have been very well supported by them. They also put together a group, as Marilyn has referred to, the National Task Force for Interoperability, which most of the people at this table were members of, to try to bring in the State and local elected officials. So we have been working with the feds, but on a limited basis.

Mr. CLAY. I thank you and thank the panel for their responses.

Mr. PUTNAM. Thank you, Mr. Clay.

I overlooked one item. I understand we have received written testimony for the record from Mr. Vincent Stile, the president of the Association of Public Safety Communication Officials International. Mr. Stile is also the policy radio communications systems director for Suffolk County, New York Police Department.

I ask unanimous consent that Mr. Stile's testimony be inserted in the appropriate place in the records.

Without objection, we will do that and place his statement in the record.

[The prepared statement of Mr. Stile follows:]

WRITTEN TESTIMONY OF

VINCENT R. STILE, PRESIDENT
ASSOCIATION OF PUBLIC-SAFETY COMMUNICATIONS OFFICIALS-INTERNATIONAL, INC.

BEFORE THE

UNITED STATES HOUSE OF REPRESENTATIVES
COMMITTEE ON GOVERNMENT REFORM

SUBCOMMITTEE ON NATIONAL SECUIRTY, EMERGING THREATS, AND INTERNATIONAL RELATIONS

SUBCOMMITTEE ON TECHNOLOGY, INFORMATION POLICY, INTERGOVERNMENTAL RELATIONS AND THE CENSUS

November 6, 2003

Thank you for the opportunity to submit my testimony. My name is Vincent Stile, and I submit this written testimony today in my capacity as President of the Association of Public-Safety Communications Officials-International, Inc. ("APCO"), the nation's oldest and largest public safety communications organization (www.apco911.org).

I am also the Police Radio Communications Systems Director for the Suffolk County Police Department, Long Island, New York, the fourteenth largest police department in the nation, and serve as chair of the New York Metropolitan Advisory Committee (NYMAC) dealing with the concerns of radio spectrum as it affects first responders in New York City and its surrounding areas.

Founded in 1935, APCO has over 16,000 individual members, most of whom are state or local government employees who manage and operate communications systems for police, fire, emergency medical and other public safety agencies. APCO is certified by the Federal

Communications Commission (FCC) as a frequency coordinator for state and local government public safety licensees. APCO recommends frequency assignments for applicants seeking to add or expand their communications system, with the goals preventing harmful interference to critical operations, promoting interoperability, and maximizing spectrum efficiency. APCO's frequency department consists of a full-time staff and over 55 volunteer local frequency advisors throughout the United States. Until recently, I was the primary local frequency advisor for Southern New York, and continue to serve as an alternate advisor.

APCO is also deeply involved in a wide range of policy issues of concern to state and local government public safety communications, including spectrum allocation and management, deployment of "Enhanced 9-1-1" services, and funding for new communications networks and systems. APCO frequently participates in proceedings regarding these issues at the FCC, before Congress, and in the Executive Branch.

Much attention has been given recently to communications "interoperability" for first responders. I want to address that issue and what APCO believes is necessary to improve interoperability. However, I first want to emphasize that we in public safety prefer to look at the bigger issue of "communications." At the most basic level, each public safety agency must be able to communicate effectively with its own personnel. Unfortunately, many agencies do not have effective internal communication, let alone interoperability with others. Internal problems result from a lack of radio frequencies, outdated equipment, and insufficient funding for state-of-the art radio systems. Once internal communications are addressed, the next level is the need for better interoperability with

surrounding and overlapping jurisdictions on a day-to-day basis. Finally, there is a need for improved interoperability between federal, state, and local agencies responding to major emergencies.

The lack of interoperability has many causes, and the solutions are often complex. We believe that there is a need for better local and regional planning, equipment standards, funding for short-term interoperability technologies, additional spectrum capacity, and better coordination among federal, state, and local government bodies charged with improving and promoting public safety communications.

Part of the solution is better planning and coordination of existing resources at the local and regional levels. For example, I chair the New York Metropolitan Advisory Committee (NYMAC) which helps to coordinate the communications needs of the many public safety agencies serving New York City and nearby areas. Many APCO members are involved in similar regional efforts across the country.

Incompatible radio equipment from different vendors can also be a problem, especially in a digital environment. APCO anticipated this issue back in late 1980's, when it initiated Project 25 to establish user-driven, public safety digital interoperability standards. Those standards are now in use at the federal, state, and local levels, with digital, interoperable Project 25 compatible radio equipment available from multiple vendors. Project 25 continues to refine and adapt standards to reflect improvement in technology and spectrum efficiency. Long term, technologies such as

software defined radios may take interoperable equipment a step further, and APCO has been involved in that process through the National Public Safety Telecommunications Council.

The lack of available radio spectrum allocated for public safety use is also a major impediment to improved interoperability. For example, without excess channel capacity, regional public safety agencies cannot dedicate sufficient channels for "mutual aid" or "interoperability" Moreover, the lack of available radio spectrum has forced public safety agencies to operate in multiple, incompatible portions of the radio spectrum. With sufficient channel capacity, agencies within the same region could migrate to a spectrum efficient wide-area system operating in single frequency band.

As an example of the diverse spectrum use that now exists, the Suffolk County Police Department operates on 800 MHz band frequencies while fire, EMS, and some local police departments within the County's borders operate on either VHF (150-170 MHz) or UHF (450-512 MHz) band frequencies. Similar variations occur in neighboring Nassau County, and within New York City. The agencies in question are working hard to find ways to interoperate as best they can, but the lack of radio spectrum is a major hindrance. There are not even enough channels to create a cross-band patch, let alone sufficient spectrum for a wide-area, multi-agency system in a single frequency band. This is a common problem in many areas of the country.

Apart for "interoperability," the lack of sufficient radio spectrum also limits internal communications capability for many public safety agencies. In many areas, existing channels are

overcrowded just with internal communication, without even considering the need for "external" interoperability. Many agencies are also unable to implement new state-of-the-art communication tools within existing, inadequate radio spectrum allocations.

Thus, APCO and other many public safety organizations have urged Congress to take immediate steps to make additional spectrum available. In particular, Congress needs to establish a firm date for the availability of twenty-four (24) MHz of spectrum in the 700 MHz band that remains blocked by TV stations pending the digital television transition.

The Balanced Budget Act of 1997 required the FCC to allocate an additional 24 MHz of radio spectrum for public safety services, and the FCC subsequently did its part and reallocated to public safety 24 MHz of spectrum from TV channels 63, 64, 68, and 69 (764-776/794-806 MHz). However, the 1997 Act allows television stations on those and other relevant channels to remain on-the-air until December 31, 2006, OR until 85% of households in the relevant markets have the ability to receive digital television (DTV) signals, whichever is later.

The lack of a firm date for nationwide public safety use of this spectrum is a major problem. The additional spectrum would alleviate congestion and facilitate further deployment of wide-area, multi-jurisdictional radio systems, which are often the most effective means of providing for interoperability. However, without a firm date for clearing TV broadcast stations from the 700 MHz band, state and local governments are unable to plan, fund, or construct new radio systems using this valuable public safety spectrum. Representatives Jane Harman (D-CA) and Curt Weldon

(R-PA) have introduced legislation (H.R. 1425) to address this issue, which we and many other public safety organizations strongly support.

APCO is also deeply involved in efforts to resolve interference to the 800 MHz band, where many current wide-area, interoperable radio systems operate. That band is heavily used in most of the nation, and is subject to interference from Nextel and other cellular operations on adjacent channels. APCO and other national public safety organizations have joined with representatives of other 800 MHz band users to create a "Consensus Plan" for addressing the interference problem. APCO continues to strongly support the Consensus Plan.

Finally, I would like address Federal government efforts to promote interoperability and better overall public safety communications. I know that the Committee will be discussing SAFECOM, an e-government initiative within the Department of Homeland Security. APCO has worked very closely with the International Association of Chiefs of Police (IACP), the International Association of Fire Chiefs (IAFC), the National Sheriffs Association (NSA), the Major Cities Chiefs (MCC), and the Major County Sheriffs (MCS), to ensure that SAFECOM has adequate input from those representing the state and local government public safety perspective. APCO has joined with these public safety leadership organizations to form the Coalition for Improved Public Safety Communications (CIPSC) to work with SAFECOM on these issues.

One of the issues that SAFECOM is exploring is the process and jurisdictional responsibility for allocating and managing radio spectrum for state and local government public safety agencies.

That responsibility has always rested with the FCC, whereas allocation and management of spectrum for Federal agency use rests with the National Telecommunications and Information Administration (NTIA) within the Department of Commerce. Recently, we submitted a position paper to SAFECOM supporting the retention of this basic jurisdictional division. However, we also recommended that better coordination and cooperation between the FCC and NTIA is necessary. A copy of our position paper is attached.

On behalf of our nation's first responders, I want to thank you once again for conducting this hearing and for allowing me to submit my testimony today. APCO looks forward to working with Congress to ensure that public safety agencies have the resources necessary to fulfill their obligation to protect the safety of life, health, and property.

STATEMENT OF
ASSOCIATION OF PUBLIC-SAFETY COMMUNICATIONS OFFICIALS-INTERNATIONAL, INC.
INTERNATIONAL ASSOCIATION OF FIRE CHIEFS, INC. and INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION
INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE
MAJOR CITIES CHIEFS ASSOCIATION
NATIONAL SHERIFFS' ASSOCIATION
MAJOR COUNTY SHERIFFS' ASSOCIATION
NATIONAL PUBLIC SAFETY TELECOMMUNICATIONS COUNCIL
October 10, 2003

ALLOCATION AND MANAGEMENT OF RADIO SPECTRUM FOR STATE AND LOCAL GOVERNMENT PUBLIC SAFETY COMMUNICATIONS

The Communications Act of 1934 provides that all non-Federal Government use of the radio spectrum is to be allocated and managed by the Federal Communications Commission ("FCC" or "Commission"), an independent regulatory agency. This includes spectrum licensed to commercial entities, as well the spectrum licensed to state and local governments for their police, fire, EMS and other public safety communications operations. Federal Government spectrum use is managed by the National Telecommunications and Information Administration ("NTIA"), within the Department of Commerce. We believe that this important, fundamental distinction should be maintained, though we also suggest that greater cooperation and coordination between the FCC and NTIA is necessary to promote more efficient and effective public safety use of the radio spectrum. The FCC should also raise public safety to higher level of importance within its organizational structure.

Maintain FCC/NTIA Jurisdiction

Some have suggested that jurisdiction over state and local public safety spectrum should be shifted to NTIA or another Executive Branch entity. The apparent goal of such move would be to combine under one agency the management of all "public safety" spectrum, including spectrum used by state and local public safety, and by Federal entities such as the Federal Bureau of Investigation, the Department of Treasury, the Department of Defense, and the Department of Homeland Security. We believe that such a fundamental shift would be harmful to state and local government public safety agencies, and would not promote better spectrum efficiency or efficacy.

State and local government public safety radio communication is currently subject to the FCC's jurisdiction. As an independent regulatory agency, the FCC has no vested interest in any of the entities subject to its jurisdiction. Thus, the FCC commissioners and staff are free to make policy decisions based solely upon the Commission's interpretation and implementation of its enabling statute, the Communications Act of 1934, as amended, and related legislative directives. A principal purpose of that legislation is to promote "the safety of life and property through the use of wire and radio communication."

Federal government spectrum use is currently managed by NTIA, itself part of the Executive Branch. Thus, NTIA has an inherent, vested interest in meeting the communications requirements of Federal agencies under the common control of the President. We do not believe that NTIA (or any other Executive Branch agency) should also have control over the allocation and management of spectrum licensed to and used by state and local governments. Despite good intentions, such an Executive Branch spectrum manager would have a built-in conflict of interest, and would be expected to give preference to the needs of the Executive Branch, potentially to the detriment of state and local government entities.

The FCC provides numerous formal and informal opportunities for public participation in its decision-making process. Over the years, the public safety community has been able to develop good working relationships with commissioners and staff, providing them with critical information regarding the actual operating conditions and needs of public safety communications. The public also has open access to a broad range of data and information regarding non-Federal spectrum allocation and use. Similar dialogue and access to information is difficult if not impossible with NTIA, insofar as much of its spectrum management involves classified information. For example, we have urged that the Department of Defense provide additional spectrum sharing opportunities in certain frequency bands for public safety agencies in portions of the U.S. that do not have extensive military facilities. That effort has been stymied by the unwillingness of the DOD to release classified information regarding its current and future spectrum utilization.

We also do not believe that NTIA is equipped to handle the massive task of issuing, maintaining, and enforcing the tens of thousands of licenses held by state and local governments. The FCC has developed an efficient automated licensing system for both public and private licensees. The FCC also has license enforcement mechanisms in place, including skilled field office personnel, to enforce rules and prevent harmful and disruptive interference to licensed operations. Moving that entire licensing and enforcement structure to NTIA or another Executive Branch agency would be enormously disruptive, inefficient, and unnecessary.

FCC licensing of public safety (and similar private wireless) licensees is built upon decades of regulation and administrative law decisions. That historical record has great value and helps to defines the rights and obligations of public safety licensees and the Commission. It is unclear as to whether and how this regulatory foundation could be maintained if jurisdiction for state and local government public safety is moved to the Executive Branch.

Most state and local government public safety systems currently operate in frequency bands with mixed allocation of public safety and non-public safety channels. Thus, while specific channels may be designated for public safety, adjacent channels may be licensed to business, industrial, or commercial wireless licensees. The FCC maintains jurisdiction over all of those entities and frequency allocations, and thus is uniquely

suited to develop and enforce interference protection criteria. Furthermore, many public safety agencies operate on channels that are open for use by a broad range of public and private licenses (e.g., land mobile operations in 470-512 MHz and 806-809/851-854 MHz, and nearly all point-to-point microwave operations). These mixed frequency allocations and assignments would be difficult to administer if the FCC lost its jurisdiction over state and local government licensees.

Therefore, for the reasons discussed above, we strongly urge that the FCC continue to have primary responsibility for allocating and managing radio spectrum for state and local government public safety agencies.

Need for Improvement

While we do not support major changes in jurisdictional responsibility, we do believe that much greater cooperation is needed between NTIA and the FCC, especially as it relates to public safety communications. Cooperation is needed to promote interoperable emergency communications across local, state, and federal jurisdictional boundaries. Improved inter-agency coordination could also lead to more efficient spectrum utilization. While state and local government public safety spectrum use is different in many respects from Federal government use, the similarities are significant, especially as to the critical nature of the communications. That suggests a potential for far more "sharing" of spectrum across jurisdictional boundaries.

The FCC should also place a higher organizational priority on public safety issues, with high level officials given primary responsibility for coordinating issues related public safety. The Commission should also establish a task force on public safety, drawing from all relevant offices and bureaus, with appropriate participation by representatives of the public safety community.

For further information, please contact:

Robert Gurss (APCO) at 202-833-3800 or gurssr@apco911.org
Harlin McEwen (IACP, NSA, MCCA and MCSA) at 607-257-1522 or chiefHRM@leo.gov
Alan Caldwell (IAFC) at 703-273-9815 or dirgovrels@ichiefs.org
Marilyn Ward (NPSTC) at 407-836-9668 or marilyn.ward@co.orange.fl.us

Mr. PUTNAM. At this time I recognize Mr. Schrock from Virginia.

Mr. SCHROCK. Thank you, Mr. Chairman. I love Bill Janklow, but I hate following Bill Janklow, because he says it exactly as it is, and you are five miraculous people. In fact, I have had the privilege of hearing Ms. Valicenti and Councilwoman Praisner before, and I don't know why we can't get our act together and get this done. How many hearings do we have to have before we get it done?

I looked at Congresswoman Harman's testimony. She talks about the fires. My family and my wife's family live there; my wife and son were caught in those fires, so I know how bad it is. You know, if they had something, they could have had the tracking maps, the locations, on and on it goes.

And I think one of the most telling things is from Marilyn Ward's testimony. She says in here interoperability has been brought to the forefront by disasters such as the Air Florida plane crash here in D.C. on the 14th Street Bridge. Are any of you aware how long ago that was? Twenty-one years ago. I was here when that happened. Twenty-one years ago. Yet we never seem to get this thing solved.

I heard Mr. Jenkins say there is no single bullet solution. I don't think he is advocating that, I think he thinks that is just the situation, but there needs to be.

My question is, then, who do you believe should and will decide the standards for preparedness for each locality, for each State, for each area, and the country? In our area, I represent Virginia Beach and Norfolk. We too have our Chesapeake Bay Bridge as well. And we have massive numbers of military, a huge port there, and I worry that we are going to have a problem. Any money I am getting for my localities right now I am making sure they are getting the same equipment. During our recent hurricane it worked. It really did. But we are just Hampton Roads area; that is not Richmond, northern Virginia, Virginia, or the country.

Who's got the responsibility for doing this? Ultimately I think we do, but at what point does it become a local, State, or region responsibility?

Yes, ma'am?

Ms. WARD. Right now the SAFECOM program is working with NIST to work in this direction, and SAFECOM is a good place because we have representatives on the executive committee and other levels that are State and local representatives. You can't create a standard without having the people that are impacted by the standard at the table. And so that is an excellent forum to do that because you have the leadership of all of the different public safety organizations available in the executive committee and the other levels of SAFECOM.

Mr. SCHROCK. Ms. Valicenti.

Ms. VALICENTI. I would support that SAFECOM is a very good area to have that conversation, but I would also encourage that the individual States, I give you the State perspective, form committees, form councils to discuss this issue, because ultimately you have to get buy-in. You have to get buy-in that this is a good thing to do to adhere to a set of standards, and that, frankly, is not an overnight thing.

The other issue that maybe we have not yet discussed nearly to the same extent is the availability of equipment, and manufacturers have to agree to provide equipment to a set of standards; and that conversation is really with the private sector and the public sector officials.

Mr. SCHROCK. Your State adjoins my State, and if we have those committees and Kentucky does their own thing and Virginia does their own thing, yet there has probably got to be a national standard somewhere so before these committees get together they are all working from the same standard so everybody can work together.

Ms. VALICENTI. Absolutely. Kentucky is surrounded by seven States.

Mr. SCHROCK. We are privileged to be one of them.

Ms. VALICENTI. And we know that all incidents will not occur in the middle of the State.

Mr. SCHROCK. That is exactly right.

Mr. Ake.

Mr. AKE. I think that the multi-State compact that we are working on in CapWIN, with Virginia, Maryland, and D.C., we will learn a lot of lessons about that. I am already running into lessons with three different laws, three different ways of doing business, and trying to combine that into one, and it has been a real learning experience for me, coming from a State that has a State-wide system. So I think we will learn a lot from that, and I think ultimately the partnership piece has to be put together, but the Federal folks have to come together with a standard and some guidance and that kind of thing. What we have had in the past, we have had equipment being built to different standards, not using IP standards or whatever, and none of them will talk to one another. So we have to say to folks, our vendors around the country, this is what we want and this is what we want it to do.

Mr. SCHROCK. I agree. You agree as well? I am old, guys, I am 62. Let us get this done, because I don't want to come back in another 20 years and have to say, gee, 20 years ago I mentioned that Ms. Ward talked about the same thing that happened 21 years ago. This is ridiculous. The Governor is right, we have to get this done and get it done quick.

Thank you, Mr. Chairman.

Mr. PUTNAM. Thank you, Mr. Schrock.

Mr. Ruppersberger.

Mr. RUPPERSBERGER. I didn't know 62 was old.

First, there is a lot of frustration here, and I was a former county executive, and when you manage your public safety one of your biggest expenses and frustration is the communication; and it is not with your own jurisdictions, but it has to be regional, State-wide, and even more than that, and I will give you an example. We all know of the situation with the snipers in the Washington area, and in the evidence that was found, they were then going to target schools in Baltimore, elementary schools in Baltimore. And, you know, over and over, and especially with drugs, which is probably still our most serious crime today, and the implications of drugs, we need to be able to communicate just beyond our own regions and States. You know, crime has no geographical boundary, and if you can't communicate, you just can't do the job. As a result of Sep-

tember 11, now it has come to the forefront even more that we have to do something.

Now, Councilwoman Praisner, you made a comment, and I would like you to explore that, because what we want to do here is get to the bottom line and make recommendations. I mean, that is what we really want to do. You made a comment that you felt that local government needs to have ownership of these systems. I am not sure if I agree, but I would like you to explore that. I think that you have to have really a national plan and the help of the Federal Government to coordinate it. You know how difficult it is to get a lot of elected officials together and come to an agreement. Just look at us here on Capitol Hill. So we need that formula to pull together to focus on the right plan, and then we need to talk about a lot of times it comes down to money, how are we going to pay for it. And there are over 3,000 counties, as you know, or more, in this country that might not be able to do it.

So let me have your thoughts on that, or anyone else who wants to talk about that issue, implementation.

Ms. PRAISNER. Congressman, thank you very much. The issue of ownership is not an issue of who has title to the document or the equipment. The issue of ownership is one of assuming responsibility and knowing that you are part of the solution, and that you are at the table as the solution is worked through.

You were extremely effective as county executive and as president of the Maryland Association of Counties because your philosophy was, and is, to bring everyone to the table, and you are anxious to listen to what the views and thoughts of people are before decisions are made.

One of the challenges we face from a local elected official perspective is that lack of opportunity in many occasions, on many arenas, for participation to offer the perspective of what actually does work in your community. As George indicated, whether it is the first responder himself or herself who has to use the equipment or, in my perspective, the local elected official who has to raise his or her hand and make a decision as to whether you fund, and in these times it is a case, and I would suspect that it in any time it is a case of making choices. And so the question is do I make this choice to fund or support this equipment, or do I vote to participate in this structure, or do I not. And it is a tug and it is a question of education and information, ownership and partnership, and we don't always have that; and local elected officials are often the last people invited to the table, if at all.

And that is my point, is that whenever someone may dictate from whatever level they may be, unless you have the participants of the first responders and the local elected officials who have to fund those programs or systems, you don't have ownership in the best sense of the word.

Mr. RUPPERSBERGER. OK.

My time is up? That was a quick 5 minutes.

Mr. PUTNAM. We owe you a couple of minutes.

Mr. RUPPERSBERGER. Oh, I thought so.

Mr. PUTNAM. We gave you 3, but because so many people have left, we will give everybody 5. So keep on going.

Mr. RUPPERSBERGER. OK, well, let us get to the bottom line. What would you, in a very concise statement, or anyone on this panel, what do you think we need to do? We have all talked about different issues in our statements, but we need to talk about funding; we need to talk about pulling it together. How would you recommend we do that from your perspective?

Ms. VALICENTI. I would like to point out two issues where I think you could be very instrumental. The first one is the whole funding issue. I don't think any single entity will have all the funding, so there has to be a drive toward pooled funding; and pooled funding is Federal funds, State funds, and local funds. And we have a couple of examples where that has worked, and I think the more that the States can do to coordinate that funding, the more likely we will, then, to provide solutions which are going to be interoperable.

But I think that there is a second issue, and that is one where I think that this committee can be most influential, and that is that the funding that is provided from the Federal level come with a requirement that it has to either regionally participate in an interoperable environment or State environment, or some kind of strings attached as far as standards. And unless that happens, we will continue to recreate what we have been creating for the last 20-some years, stovepipe systems.

Mr. RUPPERSBERGER. Are you saying that Federal standards or bureaucracy is getting in the way?

Ms. VALICENTI. No, I don't think so. I think that the discussion and, frankly, SAFECOM is probably a good example where the discussion of standards is occurring, the discussion on how to do that is occurring, and I think that there are more and more forums that are buying into a standards-based.

Mr. RUPPERSBERGER. Chairman Shays put together a bill about standards with first responders, and maybe we could continue to explore that.

On your bill about standards that we have for first responders, maybe we can tie this subject matter into that somehow.

Mr. SHAYS. Right. If the gentleman would yield.

It is really our bill, yours and mine, and some others in the committee. We are trying to insert that in the bill on the select committee and Homeland Security, which is a little broader, and there is a way to do that in that bigger bill, and we should do it.

Mr. RUPPERSBERGER. Good.

Ms. VALICENTI. I would suggest that if you could do those two things, that request for money has to demonstrate that it will buy into standards and, second, it has to demonstrate that it buys into a larger interoperable environment, multi-jurisdictional environment.

Mr. AKE. In North Carolina, in my other life, I sat on a board that did grants, and we said to the people of North Carolina, if you want to be considered, it has to be multi-jurisdictional. It was amazing to see them start forming partnerships and start working together. So I would say to you that is certainly a method to use. They have to feel like they have ownership and they have all got to work together, but there has to be some motivation for them to do that.

Ms. PRAISNER. The only comment that I would add is that I don't think this is a one time situation where it is one check and one dollar amount and one time. This is a significant amount of money over an extended period of time, and it is going to require continuous progress; it can't be done in 1 day or one appropriation.

Mr. PUTNAM. Thank you, Mr. Ruppersberger.

I will now call on Chairman Shays for our final 5 minutes of questioning.

Chairman Shays.

Mr. SHAYS. I thank the gentleman.

In the State that I am in, we have no county government, so in one sense it seems even more difficult to get cooperation. But because of that what the State did is it basically said when it got money from the Department of Homeland Security, it said it is not giving out this money to each local community, it is going to come out only if you come together. And the trend in the Federal Government has been, as well, to try to fund grants where there is cooperation among more than just one or two entities.

I remember when I was in the State house dealing with September 11, and it is surprising to think about it now. Our opposition was the firemen and the policemen who didn't want to have to come under the same jurisdiction; fire didn't want to be with police, the police didn't want to be with fire, which was kind of fascinating. Now we have solved that problem, and now we look back on it with some horror that there was ever this ownership.

I feel, at least in our State, we are finding ways to have our communication be able to operate among jurisdictions and among different organizations and entities, at least in our State. What I am having the hardest time reconciling is the spectrum issue, and I would love someone to address that. As clearly and as succinctly as you can, tell Congress what you want us to do about the spectrum.

Ms. WARD. Public safety needs more spectrum.

Mr. SHAYS. Why don't you pull your mic closer, if you don't mind.

Ms. WARD. Public safety needs more spectrum. We have new technologies that are emerging; we would like to be able to take advantage of them. It is very difficult when you are in competition with broadcasters who have a lot more people to be able to come up here. I mean, I am on my work day here. We have volunteers. We really need to have that interference issue resolved. Congress should encourage the FCC to do that before 2004.

We really need to get the 700 megahertz band cleared. Congress needs to visit that issue and get that taken care of as soon as possible. We need the spectrum. It has already been promised to us, but now we need to get on it. And that is how we are going to build regional systems, we need the spectrum to build the regional systems. And the 700 megahertz band is going to be able to afford us a lot more flexibility in doing that.

Also, allow grant funding so that we can develop new technology standards. That is going to be an important thing for us. And when you do your grant funding, I wholeheartedly agree that it needs to be required in there that the systems be multi-jurisdictional, and they should be focused on a standard.

Ms. PRAISNER. From my perspective, one of the concerns that I have is if folks have to move, will they be held harmless by the process.

Mr. SHAYS. When you say they have to move, would you explain?

Ms. PRAISNER. If one has to move to 700 megahertz.

Mr. SHAYS. If they have to give up what they have and go somewhere else?

Ms. PRAISNER. Then they should be held harmless, and the question of the cost of that transition and the manner in which that matter would occur. There is great concern out there and anxiety, having expended significant revenue for an 800 megahertz system, to then tell a local government that you have to move from it because that is the solution that is proposed for their region and their area. And having expended those funds, will they be held harmless in the process.

Mr. SHAYS. Anyone else want to respond to that question?

Ms. WARD. The issue that Ms. Praisner is speaking about is a plan that is in front of the FCC that would allow for some compensation to come from the cellular industry, but it would require that local government move their users to the 700 band instead of the 800 band that they are currently in, and there could be some additional cost to local government for that. I don't know if you are familiar with that plan, but that is formally called the consensus plan that the majority of the public safety associations support.

Mr. SHAYS. My colleague said that it wouldn't solve it. Maybe you would like to get a response, then.

Mr. JANKLOW. My question is, for example, we went 150. Had we gone 700, for which we had the frequencies available, we would have needed five more towers because of how they penetrate, correct?

Ms. WARD. That is correct.

Mr. JANKLOW. And so for a State like mine, that went 150, we wouldn't have to migrate to that standard, correct? So the 700 won't solve the problem for everybody, but for a lot of you in America it will.

Ms. WARD. That is correct.

Mr. JANKLOW. What the FCC needs to do is get the bandwidth cleared out.

Ms. WARD. That is correct.

Mr. JANKLOW. Yes, ma'am. Thank you.

Mr. SHAYS. Thank you, Mr. Chairman.

Mr. PUTNAM. Thank you, Mr. Shays. I appreciate your leadership, and we thank Governor Janklow and Mr. Schrock and Mr. Ruppersberger, and all the others who participated in this hearing.

I particularly want to thank our five witnesses on this panel for your testimony and expertise that you have provided us. You have given us a tremendous perspective that will benefit us greatly as we move into the second hearing, which deals with our Federal agencies, and I think that you have given us a clear path for improving your lot.

As is customary, in the event that there may be additional questions for panelists or statements that we did not have time for today, the record will remain open for 2 weeks for such submissions.

Thank you all very much, and we stand adjourned. The second hearing will begin immediately.

Mr. JANKLOW. Mr. Chairman? Mr. Chairman? Might you ask the panel if they would submit within the 2-week period, those that are interested, a statement as to how SAFECOM, since that is a Federal agency or Federal group, could be modified to take in the local people as part of the process?

Mr. PUTNAM. Consider it done.

We are adjourned. Thank you.

[Whereupon, at 11:45 a.m., the subcommittee adjourned.]

[Additional information submitted for the hearing record follows:]

NASCIO
Representing Chief Information Officers of the States

December 18, 2003

Honorable Christopher Shays
Chairman, Subcommittee on National Security,
Emerging Threats, and International Relations

Honorable Adam Putnam
Chairman, Subcommittee on Technology,
Information Policy, Intergovernmental
Relations and the Census
U.S. House of Representatives
Washington DC 20515

Dear Chairmen Shays and Putnam:

On behalf of the National Association of State Chief Information Officers (NASCIO), I want to thank you for your hearing of November 6 and your attention to the truly critical issue of public safety interoperability.

Aldona Valicenti, then-Chief Information Officer (CIO) for the Commonwealth of Kentucky and former NASCIO President, testified on our behalf. In coordination with the Kentucky Governor's Office for Technology, NASCIO offers the following recommendations in response to your questions:

1) *How do you define interoperability? Who is a first responder? Is there a need for a common definition of the terms "interoperability" and "first responder"? If so, are federal, state and local agencies working together to establish common definitions?*

NASCIO generally agrees with the definition of interoperability provided by the National Task Force on Interoperability (NTFI) in which NASCIO was one of 18 participating organizations; that is, the ability of public safety agencies to talk to one another via radio communication systems – to exchange voice or data with one another on demand, in real-time, when needed. One element of this definition – "or data" – is often ignored in the current discussions over interoperability and cannot be forgotten. We are primarily focused on voice communications right now, but we don't want to implement solutions only for voice and find we can't send data later.

The *term* "first responders" are what we generally think of as the personnel (fire, police, and emergency medical) who arrive first on the scene of a disaster or event. However, the concept of "first responders" must also encompass those who make it possible for the first responders to carry out their mission – the "first response team" if you will. The

state chief information officers are a part of this "first response team" by providing the infrastructure, in many states, that is necessary for communications and information systems to operate. Common definitions of interoperability and first responder would indeed be helpful in maintaining clarity in public discussion, but much more needs to be done.

2) *Does the public safety community and senior leaders at all levels of government have the needed up-to-date information on the state of interoperability in their jurisdictions in order to develop approaches for improving and implementing interoperable wireless communications networks?*

While some officials may have a good understanding of the state of interoperability in their jurisdictions, the larger the jurisdiction (states), the less precise their understanding. NASCIO calls for federal encouragement, in state and local first responder grants, to states and localities to do a thorough assessment of the current and planned interoperability of their systems. An understanding of the current state of interoperability is critical to understanding how new systems will fit in internally to these jurisdictions, and externally with other jurisdictions.

3) *What federal processes and policies are working to help first responder communications? What can be improved on? What type of leadership to you expect from the federal government?*

The federal government, and in particular the Department of Homeland Security, should play a decisive role in providing a coherent, cohesive approach to interoperability on a national scale, primarily by coordinating the development of national standards and requiring consideration of and implementation of interoperability through the first responder grant programs. The type of federal leadership required is not direction from the top, but rather a coordinating effort that ensures the needs of federal, state and local agencies are met.

The Public Safety Wireless Network (PSWN), now complete, was an effective forum for the discussion of this issue, as was the National Task Force on Interoperability. The current strong candidate federal organization for performing a leading role on interoperability standards is the SAFECOM Advisory Board, on which NASCIO is a member. If the SAFECOM Advisory Board proves to be a dynamic successor to PSWN and NTFI, the national effort will be well served.

4) *What do you believe is the responsibility of the state governments in achieving interoperability? What do you believe is the responsibility of local governments in achieving interoperability?*

NASCIO envisions the responsibility for achieving the goal of a cohesive national policy on interoperability as resting at each level of government. The federal government playing a coordinating role in finding common ground between federal, state, and local

requirements for public safety communications and interoperability, and coordinating the development of national standards. Once the national standards are developed, local governments should determine the status of their systems, their requirements for effective mission accomplishment, and how their requirements match or differ from their contiguous jurisdictions. The state role, then, should be to facilitate these interactions between jurisdictions, and ensure these considerations as well as compliance with the national standards on interoperability are met when developing state homeland security plans.

5) *Who do you believe should and will decide what are the standards of preparedness for each locality? For each state? For each region?*

NASCIO does not currently have an established policy in this regard. However, it seems plausible to establish federal guidance for "preparedness" which states and localities can measure themselves against. Regional preparedness assessment is likely to require federal coordination.

6) *What do you believe is the role of the federal government to set standards on communications grants to states and localities?*

NASCIO believes that the federal government should coordinate the development of a national set of standards regarding interoperability in cooperation with state and local governments. Once the standards are established, the federal government should consider requiring compliance with these standards for participation in the homeland security communications grant programs.

7) *What are the advantages and disadvantages of using a regional approach to improving interoperability of public safety wireless communications? Is it equally applicable to intra-state operations and multi-state compacts?*

Indiana, Illinois, Michigan, Kentucky, and Ohio formed the Midwest Public Safety Communications Consortium (MPSCC) as an initiative to tie together each state's statewide communications system to the extent of technological and fiscal feasibility, thus developing interoperable communication between these five states for police officers, firefighters, emergency medical services providers, and other first responders. The MPSCC believes that interoperability – the capacity for public safety and first responders to transfer voice and data communications among all disciplines and across all agencies – is vital to securing the homeland. The goal of the MPSCC is to ensure that public safety responders that cross state lines retain the capacity to effectively communicate, because crime, natural disasters, and terrorist attacks cross all jurisdictions and boundaries. Although the members of the MPSCC are each implementing or have implemented a statewide communications system, they nevertheless, are enthusiastically working together to find ways to expand interoperable communications across state lines. The consortium is identifying opportunities to share infrastructure including towers and communications links.

Would you recommend a regional mechanism as a preferred approach for state and local governments to consider in planning their emergency communications efforts and why or why not?

A regional initiative is an excellent addition to the state approach to achieving interoperability, but the state's efforts must be the preferred approach. In addition, funding for state coordinated initiatives should receive priority. A regional initiative is critical to states that share common risks such as nuclear power facilities, geographical fault lines, rivers, dams or other multi-state concerns.

What has been the federal response to your states regional approach?

The regional approach of the MPSCC has received interest from federal agencies including the GSA. If successful in its efforts the MPSCC can be a model for the formation of more states joining in a regional model.

8) *Has Kentucky created state interoperability executive committees? If so, what powers do they have? Who participates in them?*

The Kentucky Wireless Interoperability Executive Committee was created during the 2003 General Session to address communications interoperability, a homeland security issue critical to the ability of public safety first responders to communicate with each other by radio. The committee advises and makes recommendations to the chief information officer regarding strategic wireless initiatives to achieve public safety voice and data communications interoperability. In carrying out its duties, the Committee shall seek to fulfill its mission as established in KRS 11.5161 through KRS 11.5163 as established in HB 309, General Session 2003. The Kentucky Wireless Interoperability Executive Committee serves as the advisory body for all public safety wireless communications strategies presented by agencies of the Commonwealth. The committee is responsible for the evaluation and recommendation of all public safety wireless communications architecture, standards, and strategies presented by agencies, and will forward these to the chief information officer for final approval. Legislation is being submitted in the 2004 General Session to strengthen the roles of the committee. The Kentucky Wireless Interoperability Executive Committee replaced the previous informal "Wireless Steering Committee" and expanded the membership to include not only state agencies, but representatives from local agencies including municipal police, fire, sheriff, EMS, city and county governments.

Does Kentucky have statewide public safety communications plans? Do they have statewide interoperability plans? Do you think the FCC should mandate state interoperability plans?

Kentucky does see the need for a statewide public safety communications plan and is currently creating working groups to address this issue. Part of the charge of the Kentucky Wireless Interoperability Executive Committee is the creation of a statewide

public safety communications plan. The chief information officer is to establish and implement a statewide public safety interoperability plan. This plan shall include the development and recommendation of architecture and standards that will insure that new or upgraded Commonwealth public safety communications systems will interoperate. The chief information officer shall provide direction, stewardship, leadership, and general oversight of information technology and information resources. The chief information officer shall report by September 15 annually to the Interim Joint Committee on Seniors, Veterans, Military Affairs, and Public Protection and the Interim Joint Committee on State Government on progress and activity by agencies of the Commonwealth to comply with standards to achieve public safety communications interoperability. In reference to the FCC mandating state interoperability plans, the FCC and other federal agencies should consider mandatory requirements including interoperability plans; however this must be supported with federal funding.

Who is a "first responder" under the way Kentucky approaches wireless communications interoperability for first responders?

The structure of the Kentucky Wireless Interoperability Executive Committee involves active participation of both emergency management agencies and law enforcement to involve "first responders" of all types. There are representatives affiliated with National Guard through the Kentucky Emergency Management in the Department of Military Affairs, the Office for Security Coordination with Kentucky Homeland Security, the Kentucky Justice Cabinet, Kentucky State Police, as well as municipal police and county sheriff representatives. The Kentucky Wireless Interoperability Executive Committee is the only formal initiative whose mission is to link federal, state, and local public safety agencies. While Kentucky Emergency Management works with federal, state, and local agencies on a routine basis, these activities relate primarily to incident response and not strategic planning for interoperability and a shared infrastructure.

9) *Does your state have a state or statewide communication interoperability plan? If so, what process does the state have in place to ensure that localities that are receiving state or federal funds are using the funds to develop projects that are in line with statewide efforts to improve interoperability?*

Organizations such as PSWN have played an important role in assisting Kentucky with improving communication interoperability for public safety agencies. The statewide communication interoperability plan is being developed through the Kentucky Wireless Interoperability Executive Committee. Options are being considered to ensure local agencies utilize funding for communications systems that will be interoperable. Legislation is being submitted to the 2004 General Assembly to grant authority for the review of state and local plans for communications interoperability.

Do current federal grants provide designated funding to support the planning process used to develop these plans? Do these grants contain restrictions that forbid the use of these funds to support a planning process?

The Commonwealth is utilizing funds to be used in the planning process of developing a statewide plan. The Kentucky Wireless Interoperability Executive Committee has working groups focusing on Architecture and Standards, a Public Safety Working Group involved in spectrum and frequency management including the 700MHz, 800MHz, and 4.9GHz public safety bands. Other working groups are charged with legislative and funding objectives.

It should be noted that federal grant programs are not addressing the need for state level coordination of implementation activities. Many of the available federal dollars have a required distribution percentage that prohibits the use of significant resources for statewide infrastructure planning and implementation. In addition, there is a dominant theme related to incident response instead of an operational response system. There is a need to target more resources to operational readiness and prevention rather than emergency response.

10) Over the last few years, do you see states contributing more funds for first responder needs? Will it be enough to help usher in the long term commitment building interoperability will require?

While NASCIO does not have specific survey results from the states on this, it does appear from anecdotal information that the states have indeed increased their spending for first responder needs. This increase, however, has been almost completely focused on "boots and suits" types of equipment. States spending is unlikely to allow them to do critical assessment and planning for their communications architecture, or to create appropriate maintenance and operations resources.

11) What does NASCIO see as the major challenges for states in achieving interoperability? What solutions does NASCIO propose?

States face a wide variety of challenges in achieving interoperability. One of these is with the 80-20 split between local and state governments in homeland security grant programs, states' ability to enforce interoperability standards is limited, and statewide communications infrastructure that may be necessary for truly interoperable statewide communications remains unfunded. Further, localities often make equipment purchasing decisions based on considerations other than interoperability and may resist efforts to enforce a statewide and/or nationwide set of standards.

The solutions to these challenges rest in the following recommendations:

- Invest SAFECOM with the requisite staff and financial resources to coordinate a development effort for a national set of standards for interoperability. The successful results and progress of PSWN and NTFI seem hopeful harbingers of what SAFECOM, properly resourced, might be able to achieve.

- These national standards should include technical guidance directing that compatibility with statewide communication infrastructure be a major consideration in the purchase of new systems.
- Once standards are developed, these should be incorporated into the state homeland security grant regulations requirements for complying with the national interoperability standards. Further, "state of interoperability" assessments should be encouraged as part of the grant process.

Two other critical elements should also be discussed:

- There is a critical need to allocate sufficient radio spectrum for public safety use to reduce or eliminate congestion and interference from other public and commercial users. The setting of standards, and development of appropriate grant eligibility regulations, will do no good if there is not appropriate spectrum for deployment of the systems when they come online.

- Finally, the role of the state chief information officers should be emphasized. NASCIO works to educate both federal and state homeland security officials about how CIOs are central to the appropriate selection, maintenance and operation of statewide communication and information systems necessary for homeland security response. State CIOs are a necessary part of the "first response team."

12) What is NASCIO's position on emergency mutual aid plans and agreements? Do you educate your member states on lessons learned and how to go about developing interstate compacts and agreements?

NASCIO does not have a specific position on this issue as such. However, we would be happy to provide the Committee with case examples from CIOs from states where such mutual aid plans have been put into place – in states where CIOs have an active relationship with their state homeland security directors. This is an important point – NASCIO has worked closely with DHS and its predecessor, the Office of Homeland Security in the White House, to actively encourage state homeland security directors to engage and coordinate with their state CIOs. With organizational and personnel changes, this process must be constantly renewed. In this context, NASCIO encourages the new Department's Office for State/Local Coordination (the directorship of which is still vacant) to work with NASCIO to promote this process in the states.

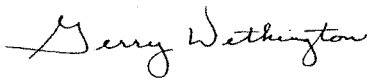
13) In your written statement you state that the most important items for national public safety wireless communications program is leadership, technical guidance, and funding. Where in the federal government do states go now to get each of these things? Would it help if it was from one department?

Leadership, technical guidance and funding are indeed the critical elements in achieving an efficient and effective national interoperability initiative. SAFECOM's leadership in

this effort is critical, but it has not yet asserted itself as it could. SAFECOM, through its advisory board, has inherited many of the elements of the successful PSWN and NTFI efforts, which were both examples of federal-sponsored leadership in interoperability. SAFECOM has the potential to provide the right manner of technical guidance as well, as the National Institute of Justice's Advanced Generation of Interoperability for Law Enforcement (AGILE) program, which is coordinated with SAFECOM, is working on technical issues related to standards and could be a source for solutions. Finally, funding for interoperability in the states had, until several months ago, come from a disparate group of federal sources, including the Federal Emergency Management Agency, Department of Justice, (including COPS) and Department of the Treasury accounts. Now, with the consolidation of much of these under the new Department of Homeland Security, there is an opportunity to bring a new direction to interoperability.

Mr. Chairmen, I hope that this provides some additional thoughts regarding the great potential for SAFECOM to move our nation's policy on wireless communication interoperability forward. NASCIO, as the association representing state chief information officers, stands ready to assist you and applauds your focus on this issue. Please do not hesitate to contact our Washington DC representative, Shay Stautz, for any further information at 703-351-5058. Thank you.

Sincerely,



Gerry Wethington
President, NASCIO

NASCIO
Representing Chief Information Officers of the States

December 18, 2003

Honorable Christopher Shays
Chairman, Subcommittee on National Security,
Emerging Threats, and International Relations

Honorable Adam Putnam
Chairman, Subcommittee on Technology,
Information Policy, Intergovernmental
Relations and the Census
U.S. House of Representatives
Washington DC 20515

Dear Chairmen Shays and Putnam:

On behalf of the National Association of State Chief Information Officers (NASCIO), I want to thank you for your hearing of November 6 and your attention to the truly critical issue of public safety interoperability.

You will recall that during the hearing Congressman Janklow requested the panelists to submit comments on how SAFECOM can work more cooperatively with state and local officials. Aldona Valicenti, then-Chief Information Officer (CIO) for the Commonwealth of Kentucky and former NASCIO President, testified on our behalf. In coordination with her, NASCIO offers the following recommendations in response to the Congressman's question:

Establish an assertive state and local liaison function: NASCIO is aware that the Department of Homeland Security has staff who serve as liaison with state and local entities, but to our knowledge, such outreach has focused on a limited number of individuals and has not included the state CIOs. The resources invested in this initiative need to be increased. States and localities should know what one point of contact they have at SAFECOM.

The SAFECOM Advisory Board is one method of ensuring state and local participation, but only if it proves to have a dynamic approach to reaching out to state and local entities.

Expand the scope: SAFECOM is primarily focused on first responders to the exclusion of necessary broader considerations that work to ensure overall effectiveness and efficiency in resource allocation. NASCIO certainly recognizes the critical nature of providing on-site responders with the equipment they need to effectively handle crises. However, the ongoing maintenance resources and underlying infrastructure must be in

place to support them. Most grant fund opportunities have focused on the up front purchase price of acquiring enhanced communications solutions; however, little is offered to provide ongoing support of these systems. As a result, coordinating agencies are forced to develop a system of user fees to recover operational costs. These fees are often considered too expensive for many small public agencies. Agencies must take the ongoing cost of the systems into account as part of their overall planning process. SAFECOM can add the element to their focus.

Hone the Message: Another way SAFECOM can work more effectively with state and local governments is to hone the message. SAFECOM needs to be clearer about its overall goals and mission so that states and localities can understand their role more effectively. For example, a common question arises – is SAFECOM a *federal* program or a *national* program? There is a crucial distinction and it goes to the heart of the confusion about SAFECOM. If it is a national program then states and localities will want to provide additional input and become invested in its success.

Once SAFECOM has devised a more focused overall message, the next task is to communicate this message to the broader communications and information technology community. NASCIO can assist in this by providing a session at our 2004 NASCIO Mid-Year Conference, to be held in Chicago in late April, for SAFECOM personnel to provide a progress update and answer questions.

Mr. Chairmen, I hope that this provides some additional thoughts regarding the great potential for SAFECOM to move our nation's policy on wireless communication interoperability forward. NASCIO, as the association representing chief information officers, stand ready to assist you and applauds your focus on this issue. Please do not hesitate to contact our Washington DC representative, Shay Stautz, for any further information at 703-351-5058. Thank you.

Sincerely,

Gerry Wethington

Gerry Wethington
President, NASCIO

ORANGE COUNTY GOVERNMENT
FLORIDA

PUBLIC SAFETY COMMUNICATION DIVISION
Marilyn B. Ward, Manager
3511 Parkway Center Court, Orlando, Fla., 32808
Office (407)836-9668 Fax (407)836-4625
Marilyn.Ward@ocfl.net

REP. CHRISTOPHER SH...
DEC 15 PM 2:47
...TON, D.C.

December 8, 2003

Vice Chairman Christopher Shays
Committee on Government Reform
2157 Rayburn HOB
Washington, DC 20515

Dear Vice Chairman Shays:

Attached please find my response to your letter of November 17th regarding the November 6th hearing on public safety interoperability. I appreciate the opportunity to speak before you and would be happy to answer any further questions regarding this critical issue.

In my testimony I discussed the Federal initiative called **SAFECOM**. I would like to reinforce my support for the **SAFECOM** program. This program is the best forum for local and state practitioners to have input into the solution for interoperability. The Executive Committee is primarily state and local representatives from both public safety and elected officials. I strongly suggest that Congress support **SAFECOM** as we move forward together as one to resolve interoperability issues.

Thank you for this opportunity.

Sincerely,

Marilyn Ward

Marilyn Ward

PUBLIC SAFETY COMMUNICATION DIVISION
Marilyn B. Ward, Manager
3511 Parkway Center Court, Orlando, Fla., 32808
Office (407)836-9668 Fax (407)836-4625
Marilyn.Ward@ocfl.net

December 17, 2003

Attached please find my response to your letter of November 17th regarding the November 6th hearing on public safety interoperability. I appreciate the opportunity to speak before you and would be happy to answer any further questions regarding this critical issue.

In my testimony I discussed the Federal initiative called **SAFECOM**. I would like to reinforce my support for the **SAFECOM** program. This program is the best forum for local and state practitioners to have input into the solution for interoperability. The Executive Committee is primarily state and local representatives from both public safety and elected officials. I strongly suggest that Congress support **SAFECOM** as we move forward together as one to resolve interoperability issues.

1. The term "interoperability" may not be easily defined or grasped. Incidents requiring "interoperability" of public safety communications for first responders can occur over a range of scenarios from responding to daily mutual aid events to major events such as the Olympics that occur over days or weeks. The term "first responder" also appears to be evolving to include more professions, such as health departments and other professions – besides the traditional first responders such as police and fire.

   How do you define interoperability? **The ability for two or more political jurisdictions' first responders to talk directly, even those using disparate communications systems, when they need to.**

   Who is a first responder? **First responders are police, fire and EMS workers who respond to 9-1-1 calls and are first on the scene and generally in the most danger.**

   Is there a need for a common definition of the terms "interoperability" and first responder"? **This was defined in the Public Safety Wireless Advisory Committee (PSWAC) process which was sponsored by the FCC and NTIA.**
   If so, are federal, state, and local agencies working together to establish common definitions? **We did in PSWAC**

2. Does the public safety community and senior leaders at all levels of government have the needed up-to-date information on the state of interoperability in their jurisdictions in order to develop approaches for improving and implementing interoperable wireless communications networks? **I do not think elected officials and appointed officials understand the issues.**

3. Our federal panel at the November 6th hearing included officials from OMB, the Departments of Homeland Security and Justice and the Federal Communications Commission. What federal processes and policies are working to help first responder communications? **The SAFECOM and AGILE Programs are the most inclusive of locals and state reps.**

4. What can be improved on? **When federal people think of this issue, they think of only federal responders. They are generally "after the fact" whereas locals are first on the scene and have the most damage done to their employees. For example, the President's spectrum committee is all Feds. There needs to be more acknowledgement of first responders and funding their needs.**

5. What type of leadership do you expect from the federal government? **I could write a book on this one. INCLUDE US in your decisions and discussions. Fund us to attend as locals have no funding to leave their areas. Acknowledge that this is a problem and get is to help resolving it together.**

6. What do you believe is the responsibility of state governments in achieving interoperability? **Some one has to take a global look and assist in coordinating some interoperability. Again, they are not first responders, but in FI our Florida Dept. of LE has been good at bringing people together statewide. Some fire chiefs may have an issue in that the domestic security task force is managed by LE people however, the overall efforts and results have been very good.**

7. What do you believe is the responsibility of local governments in achieving interoperability? **They have to plan together and forget all that "Stuff" that gets between political people. Ultimately, their responders are impacted so they have the greatest responsibility, however no funding for expensive equipment. There is also a very critical problem in staffing levels of Communications Centers and dispatchers play a large role in making this happen during an operational scene.**

8. Congress has been learning that setting standards in emergency preparedness should not only be based on population, but on critical infrastructures in a community, possible terrorist targeting and other location specific criteria. Certainly a radio system in a rural area does not need the same capabilities of a system in New York City. Who do you believe should and will decide what are the standards of preparedness for each locality? **I really cannot speak for other than Florida. We have local people from each county on our DSTF regional committees and they are working towards this.** For each state? **The state of FI has an Florida Executive Interoperability Committee which is tied into the state technology office and the DSTF and we are working on statewide systems. For** each region? **Same answer**

9. What do you believe is the role of the federal government to set standards on communications grants to states and localities? **As I said in my testimony, I think there should be no federal funds distributed that do not comply with a standard. There is an ANSI 102 standard available today. Congress should support standards making by providing grants to groups that have representatives at all levels in attendance, like SAFECOM.**

10. What are the advantages and disadvantages of using a regional approach to improving interoperability of public safety wireless communications? **This is another question that could take 4 pages to answer. I will give you the compact answer: The regional approach works better because every state is different in each area. The saying that, "if you want a temperature change in HAWAII, just go to the other side of the island" applies over all the US. The needs in rural areas and metropolitan areas are very different. A regional approach can work to the needs of that region.** Is it equally applicable to intra-state operations and multi-state compacts? **Again, it depends. Florida is flat, GA is not. Some regions are similar, others are not.**

    Would you recommend a regional mechanism as a preferred approach for state and local governments to consider in planning their emergency communications efforts and why or why not? **YES, for the reasons above.**

What has been the federal response to your states' regional approach? **They gave us a COPS grant to work on expanding all the same mutual aid channels throughout our region. We have several other regions that applied and did not get the grant. The feds are also working in the Tampa are to provide gateways to help them talk to each other and the locals.**

11. Has Florida created state interoperability executive committees? **Yes, we have one that is also tied into the DSTF- I am on the rep from the local side.** If so, what powers do they have? **The members are the managers of their respective areas so they are able to get a lot done. The State Technology Office, STO, (working for the Gov) is the chair. The STO has legislative powers over some issues, I can't quote the statutes though.** Who participates in them? **See attached chart**

    Does Florida have statewide public safety communications plans? **We are working on that now within the RDTF** Do they have statewide interoperability plans? **Working on it.** Do you think the FCC should mandate state interoperability plans? **Not unless they plan to fund the development, and training. This is a HUGE undertaking we have been working on for 2 years.**

    Have these states linked traditional public safety agencies with state and federal emergency management agencies and with such national security organizations as the National Guard? **NO, the state system being built is a Statewide LE system (SLERS) they have been working with more federal groups through the RDSTFs and I expect accommodations will be made after the state is built out.**

In other words, who is a "first responder?" under the way Florida approaches wireless communications interoperability for first responders? **They don't (as a state) they are building a statewide, state law enforcement user's system.**

12. Does your state have a state or statewide communication interoperability plan? **NO, we are working on it.** If so, what process does the state have in place to ensure that localities that are receiving state or federal funds are using the funds to develop projects that are in line with statewide efforts to improve interoperability? **We are using the RDSTF system**.

    Do current federal grants provide designated funding to support the planning process used to develop these plans? **NO** Do these grants contain restrictions that forbid the use of these funds to support a planning process? **They have been equipment grants (for communications) some others for other disciplines I cannot comment on.**

13. Over the last few years, do you see states contributing more funds for first responder needs? **Not in the Communications areas, I cannot speak for the other disciplines. Most states are in deficiets and having problems funding existing programs.** Will it be enough to help usher in the long-term commitment building interoperability will require? **NO, not without federal assistance.**

I would like to be on record as supporting the SAFECOM initiative. This is a federal program with state and locals on the executive committee. It is a wonderful opportunity to finally resolve the interoperability problems nationwide through federal coordination. Please continue to fund the program, and if possible, expand the funding to assist with technical projects. Attached please find my response to your letter of November 17th regarding the November 6th hearing on public safety interoperability.

TeleCommUnity

NACo National Association of Counties

December 19, 2003

Committee on Government Reform
C/o Grace Washbourne
2157 Rayburn Building
Washington DC 20515 - 6143

Dear Chairman Shays and Putnam:

Attached please find the responses of TeleCommUnity and the National Association of Counties (NACO) to your questions of November 17, 2003. Please feel free to call either myself, Gerry Lederer of TeleCommUnity (202 785-0600) or Jeff Arnold of NACo (202 393-6226) if we may be of further assistance.

Please also accept my best wishes for the Holidays and into the New Year.

Sincerely,

Marilyn Praisner
Chair
TeleCommUnity

Chair
Telecommunications and
Technology Committee
NACo

TeleCommUnity NACO National Association of Counties

"First Responder Interoperability: Can You Hear Me Now?"

I. CAN YOU TELL US WHY LOCAL OFFICIALS ARE IMPORTANT TO ACHIEVING INTEROPERABILITY FOR FIRST RESPONDERS?

Local officials are important to achieving interoperability because they are the elected officials closest to the first responders. Whether in the small townships and counties of rural America or the larger suburban and urban counties and cities, it is the local elected official who makes decisions about funding and policies that dictate the equipment and capacity of first responders. State and federal funding and policies are important but they do not play the day in and day out, year after year role that is played by the local level of government.

Therefore, if equipment or policies need to be changed, it is the local elected official who needs to understand why and agree. If local government officials are to succeed with long term, sustainable interoperability, it will be because local elected officials understand the importance of achieving interoperability and are committed to its implementation.

II. CAN YOU GIVE US SOME SPECIFIC EXAMPLES OF WHAT MEMBERS OF YOUR ORGANIZATION HAVE DONE TO HELP?

NACo and TeleCommUnity have played different role regarding the issue of interoperability:

NACO

In its role as the only national organization for county officials, NACo has played an active role as advocate for, and educator to, local government. NACo participated in the National Task Force on Interoperability (NFTI), which culminated in the guidebook for local officials, ***Why Can't We Talk.***[1] During the deliberations of that task force and since the development of the guidebook, NACo representatives have continued to participate in panel discussions at meetings of local elected officials in an effort to broaden local official understanding. Many copies of this guidebook have been distributed to local officials.

[1] The book may be downloaded at http://www.agileprogram.org/ntfi/ntfi_guide.pdf

Soon after the tragic events of September 11th then NACo president, Javier Gonzales convened representatives of county government from across this nation to develop a Homeland Security platform for NACo. Integral to that platform was the recognition that first responders, in the broadest sense of the word, need the technical capacity to communicate.

Even before September 11th NACo representatives at national forums and within internal NACo groups were talking about the challenges of public safety communication. Until recently, when the FCC decided to reconstitute its Local State Government Advisory Committee (LSGAC), NACo participants on the LSGAC have attempted to provide a local government perspective to that federal agency on a variety of issues including spectrum, interference problems, tower siting and rights-of-way management. NACo has a representative on the Executive Committee for SAFECOM and on its predecessor, the Public Safety Wireless Network (PSWN).

TeleCommUnity

As an alliance of individual local governments and their associations, TeleCommUnity seeks to refocus attention in Washington on the principles of federalism and comity for local governments' interests in telecommunications. Certainly interoperability, including, spectrum management, interference, and funding are key components of that issue. Through its website and printed materials, TeleCommUnity has attempted to educate local elected officials on the specific issues that might undermine their attempt to achieve the goals of interoperability and on the opportunities for funding and advocacy to further local government goals. TeleCommUnity leaders have participated in briefings of Congressional staff on the local government perspective and priorities.

III. DO YOU FEEL THE FEDERAL GOVERNMENT HAS DONE ENOUGH TO REACH OUT TO LOCAL OFFICIALS IN THEIR INDIVIDUAL EFFORTS TO REACH FIRST RESPONDER INTEROPERABILITY?

If local government officials were grading federal government efforts to reach out to local officials, they would have to give it a "C". High marks would go to the AGILE program's leadership role in calling together the National Task Force on Interoperability and the publishing of ***Why Can't We Talk?***. It was a first ever attempt to bring together elected officials at the state and local level and representatives of first responder, public safety organizations. Although fewer local elected officials were included, local government officials were encouraged by the PSWN program's efforts to provide support and educational opportunities in their meetings and sessions around the country that brought together public safety personnel, highlighted best practices and successful initiatives, and

provided assessment tools. After some initial problems, the SAFECOM program seems well on its way to becoming a successful inclusive effort. However, there are still too many disparate programs at the federal level and local elected officials still are left out of many deliberations. For example the Administration's Interoperability initiative excludes local elected officials from its deliberations and the Federal Communications Commission has been less than inviting in its approach to local government concerns. On the most part local elected officials find the federal government efforts disjointed and hard to access.

IV. WHAT KIND OF RELATIONSHIPS DO LOCAL GOVERNMENTS HAVE WITH THE FCC IN ACQUIRING SPECTRUM ALLOCATIONS AND INTERFERENCE ASSISTANCE THAT YOU HAVE SEEN?

Most local governments have little or no interaction with the Federal Communications Commission, including the issues of spectrum allocation or the problems of interference. For most elected officials there is little knowledge of the FCC's role. Certainly the experience of Anne Arundel County, Maryland, which we related to you at the hearing, is an example of a less than helpful experience with the FCC. The FCC has not effectively reached out to local governments in either spectrum deliberations or correcting interference.

As **Why Can't We Talk** noted, it is sadly ironic that on September 11, 1996, five years before the attacks of September 11, 2001, the Public Safety Wireless Advisory Committee (PSWAC) released its final report. PSWAC concluded "unless immediate measures are taken to alleviate spectrum shortfall and promote interoperability, public safety will not be able to adequately discharge their obligation to protect life and property in a safe, efficient, and cost-effective manner."

V. CAN YOU TELL US HOW MONTGOMERY COUNTY COUNCIL MEMBERS PARTICIPATED IN THE IMPLEMENTATION AND PLANNING FOR CAPWIN?

In the initial development of CAPWIN, the Maryland local government presence in implementation and planning was focused on the Montgomery County staff level. Local government elected official representation came from Prince George's County Councilmember Jim Estepp, whose prior to elected office experience in the fire service made him an ideal representative. With Mr. Estepp's elected service ended because of term limits, Montgomery County Councilmember Marilyn Praisner replaced Mr. Estepp on the governing board of CAPWIN. Even before that change Montgomery County Councilmembers were included in briefings on CAPWIN. More recently, as CAPWIN has matured, these briefings have increased. As a member of the Executive Committee of CAPWIN, Councilmember Praisner has participated on a regular basis in the

decision making for CAPWIN and has served on several panels to share the CAPWIN story with others.

VI. THE TERM "INTEROPERABILITY" MAY NOT BE EASILY DEFINED OR GRASPED. INCIDENTS REQUIRING "INTEROPERABILITY" OF PUBLIC SAFETY COMMUNICATIONS FOR FIRST RESPONDERS CAN OCCUR OVER ARRANGE OF SCENARIOS FROM RESPONDING TO DAILY MUTUAL AID EVENTS TO MAJOR EVENTS SUCH AS THE OLYMPICS THAT OCCUR OVER DAYS OR WEEKS. THE TERM" FIRST RESPONDER" ALSO APPEARS TO BE EVOLVING TO INCLUDE MORE PROFESSIONS, SUCH AS HEALTH DEPARTMENTS AND OTHER PROFESSIONS – BESIDES THE TRADITIONAL FIRST RESPONDERS SUCH AS POLICE AND FIRE.

How do you define interoperability?

Local government officials agree that "interoperability" is hard to define and that the term "first responder" is changing. The general working definition of "interoperability" which local government officials believe all levels of government are comfortable with is "the ability of public safety and other necessary personnel, as appropriate, to exchange voice and data information with one another on demand, in real time, when needed.".[2]

Who is a first responder?

The term "first responder" is evolving. It is interesting to note that in its glossary of terms, ***Why Can't WeTalk?*** does not attempt a definition of "first responder" but does define public officials[3], public safety providers[4] and public safety support providers[5], all of whom to some extent are first responders..

---

[2] This is the PSWN definition of interoperability that should be the standard by which we measure achievement in interoperability. TeleCommUnity, NACo and the National Task Force on Interoperability employ almost the identical standard for interoperability.

[3] "Public officials represent or work for government entities often in executive roles. Public officials include elected and appointed officials at every level of government working to serve the public in a variety of roles, such as council members, police chiefs, fire chiefs, sheriffs, governors, chief information officers, mayors, and chief communications officers." ***Why Can't We Talk?*** at 91.

[4] "Persons who perform emergency first response missions to protect and preserve life, property, and natural resources and to serve the public welfare through Federal, State, or local governments as prescribed by law. Public safety service providers also include non-governmental organizations who perform public safety functions on behalf of the government. For example, a number of local governments contract with private groups for emergency medical services." ***Why Can't We Talk?*** At 91

[5] "Includes those whose primary mission might not fall within the classic public safety definition, but whose mission may provide vital support to the general public and/or the public safety official. Law enforcement, fire, and EMS would fit the first category, while transportation or public utility workers would fit the second." ***Why Can't We Talk?*** at 92

Much of the evolving nature of who is a first responder can be attributed to the changing nature of the threats to which local governments must be prepared to respond. For example, the need for public health responders and transportation personnel to be able to communicate in real time with public safety personnel during times of emergencies was previously less obvious. Today, local government officials know differently.

In general a "first responder" is any personnel, or group of personnel, who will be called upon at the onset of an incident. Obviously the type of incident or event will dictate who is a first responder and some flexibility is necessary. Local government officials believe that with modest modifications, these definitions are adequate for federal, state and local agencies.

Is there a need for a common definition of the terms " interoperability" and "first responder"? If so, are federal, state, and local agencies working together to establish common definitions?

As referenced above, we believe that there are workable definitions for "interoperability" and "first responder" on which federal state and local agencies can agree. What is, however, still lacking is a common vernacular so that police, fire, and other personnel understand what is meant when certain terms are used. Emergency communications personnel and others have identified this as an issue and therefore it is one that needs prompt resolution.

VII. DOES THE PUBLIC SAFETY COMMUNITY AND SENIOR LEADERS AT ALL LEVELS OF GOVERNMENT HAVE THE NEEDED UP-TO-DATE INFORMATION ON THE STATE OF INTEROPERABILITY IN THEIR JURISDICTIONS IN ORDER TO DEVELOP APPROACHES FOR IMPROVING AND IMPLEMENTING INTEROPERABLE WIRELESS COMMUNICATIONS NETWORKS?

The answer to this question will vary across this country depending upon the level of awareness of the issues. That is why education and sharing of best practices is so important. Certainly, since September 11th it is hard to imagine that local officials – both elected and staff – would not be aware of the issues. Every day our national organizations receive inquiries regarding the issues. That is where publications such as **Why Can't We Talk?** are so important, because they provide assessment tools and referral information.

Local government officials believe that there still exists a need for enhances awareness on these issues and an implementing of "road maps" for resolutions of the challenges presented at all levels of government.

NACo and TeleCommUnity are committed to assisting in these efforts, as are the other national organizations of local elected officials. For example, NACo is

pursuing grant funding so that local government officials can provide technical assistance to counties in a number of homeland security areas, including interoperability. The federal government can play a role by providing financial assistance for programs such as those sponsored by PSWN in the past and by including homeland security grant money for these efforts.

VIII. OUR FEDERAL PANEL AT THE NOVEMBER 6 HEARING INCLUDED OFFICIALS FROM OMB, THE DEPARTMENTS OF HOMELAND SECURITY AND JUSTICE AND THE FEDERAL COMMUNICATIONS COMMISSION. WHAT FEDERAL PROCESSES AND POLICIES ARE WORKING TO HELP FIRST RESPONDER COMMUNICATIONS? WHAT CAN BE IMPROVED ON? WHAT TYPE OF LEADERSHIP DO YOU EXPECT FROM THE FEDERAL GOVERNMENT?

We have previously discussed the positive reaction of local government officials and our national organizations to the AGILE initiative which resulted in ***Why Can't We Talk?*** Local government officials are increasingly becoming comfortable with the evolving leadership of SAFECOM, especially since it appears that there is a commitment to having local elected and public safety officials as active participants in the leadership of the organization.

The success of SAFECOM could meet a long identified need for a one-stop shop on interoperability issues for local elected officials at the federal level. With adequate funding and support, SAFECOM could provide that role. But until SAFECOM has been identified as a specific "line item" in the budget and appropriations bills, local governments will not feel comfortable that its one-stop shop must rely on the good will of other agencies to fund the effort.

In addition, local government officials believe the federal government should provide the technical leadership needed to develop open standards for public safety communication equipment and shepherd an effort to arrive at a common vernacular for first responder terminology that was referenced above.

As referenced in our testimony of November 6, 2003, the federal government must play a leadership role in providing needed additional interference -free public safety spectrum. Additionally, to prevent future interference, the Federal government must commit to finding and enforcing a resolution to the issue of interference, including adequate funding to resolve the issue over a sustained period of time.

Finally, NACo and TeleCommUnity would restate our support for Rep. Harmon's HERO legislation and our proposal for a Public Safety Spectrum Trust Fund.

TeleCommUnity NACO National Association of Counties

IX. WHAT DO YOU BELIEVE IS THE RESPONSIBILITY OF STATE GOVERNMENTS IN ACHIEVING INTEROPERABILITY? WHAT DO YOU BELIEVE IS THE RESPONSIBILITY OF LOCAL GOVERNMENTS IN ACHIEVING INTEROPERABILITY?

State governments can play a pivotal role in achieving interoperability. There are several models of states that have responded or are responding to the challenge by taking the lead on an assessment of communication systems within the state, providing financial assistance, facilitating collocation of critical towers, and developing a communications backbone. For example, Utah took the lead in preparing for the Salt Lake City Olympics. Maryland has convened a leadership team including municipal and county officials to develop a comprehensive plan for interoperability in that state. South Dakota has adopted a comprehensive statewide interoperable network.

Every level of government, especially local governments, must do a comprehensive evaluation of their communications systems, including an outreach to neighboring jurisdictions. This is especially important for those communities with mutual aid agreements.

Finally, in this difficult financial period, it is important that local government officials ensure that data systems of critical public safety information are maintained. By that, we mean that the data system must be sufficiently robust and accurate that a police officer or other first responder may be confident that they have access to state and federal data systems.

X. CONGRESS HAS BEEN LEARNING THAT SETTING STANDARDS IN EMERGENCY PREPAREDNESS SHOULD NOT ONLY BE BASED ON POPULATION, BUT ON CRITICAL INFRASTRUCTURES IN A COMMUNITY, POSSIBLE TERRORIST TARGETING AND OTHER LOCATION SPECIFIC CRITERIA. CERTAINLY A RADIO SYSTEM IN A RURAL AREA DOES NOT NEED THE SAME CAPABILITIES OF A SYSTEM IN NEW YORK CITY. WHO DO YOU BELIEVE SHOULD AND WILL DECIDE WHAT ARE THE STANDARDS OF PREPAREDNESS FOR EACH LOCALITY? FOR EACH STATE? FOR EACH REGION?

The specific needs of a locality, region or state are best decided at the level of government most responsible for the public's health safety and welfare. These are the leader: who know the possible response scenarios; the critical infrastructure and other specific location issues. That said, local government officials believe that federal and state officials can provide a perspective that can overcome local turf battles or tunnel vision. Local government officials have already suggested that federal standards are needed and state and regional connectivity is critical. Despite unique needs and differences, local government officials believe there can be a basic level of emergency preparedness that can transcend individual or locale specific issues.

TeleCommUnity NACO National Association of Counties

XI. WOULD YOU RECOMMEND A REGIONAL MECHANISM AS PREFERRED APPROACH FOR STATE AND LOCAL GOVERNMENTS TO CONSIDER IN PLANNING THEIR EMERGENCY COMMUNICATION EFFORTS AND WHY OR WHY NOT?

As local government officials stated in our testimony, we believe there is no single right answer to this question. The appropriate approach for an area will depend upon many factors including geography, political boundaries, critical systems that need to be protected, and topography. The entire structure of emergency response across the country is based on regional planning. In existence today are regional plans in each state that define the duties and responsibilities of "first responders". These plans should be the basis for determining interoperable needs.

For example, in the Washington Metropolitan Area a regional approach that crosses the political boundaries of Virginia, Maryland and the District of Columbia seems critical. But the participating counties in Virginia or Maryland also need to be responsive and plan with the other counties in their state that are not part of the Washington Metropolitan Area. For example, Howard County and Anne Arundel County in Maryland are not part of the Washington region. Yet they share boundaries with Montgomery and Prince George's Counties that are part of the Washington region. Montgomery County police may need to work on any given day with District of Columbia police and at the same time be concerns about communicating with Howard County personnel about activities at their border.

In Montgomery County, local government officials are working on both simultaneously including asking Motorola to develop a solution to reconfigure the 800 MHz systems purchased by Howard and Montgomery counties so channels can be shared between the two. Having secured the endorsement of elected officials to proceed, the counties are now seeking grant funding for implementation. At the same time both Montgomery and Howard County elected officials are participating in the State of Maryland's new Interoperability leadership team to develop a statewide assessment and strategic plan for statewide interoperability. In addition CAPWIN is an example of a new system that appears capable of providing an interoperability solution that can permit shared data from Richmond to Baltimore.

TeleCommUnity NACO National Association of Counties

XII. WHAT DO YOU BELIEVE IS THE ROLE OF THE FEDERAL GOVERNMENT TO SET STANDARDS ON COMMUNICATION GRANTS TO STATES AND LOCALITIES?

Again while states and localities will know best what their communication needs, there is clearly a role for the federal government is establishing priorities and criteria for the recipients of federal funds. If interoperability communications is as critical as local government officials all think it is, projects that achieve interoperability should be a high priority for federal funds. Furthermore, any communications equipment purchased with federal funds should meet required equipment standards.

NPSTC
National Public Safety Telecommunications Council

2050 E. Iliff Ave. – BW
Denver, CO 80208
1.800.416.8086
303.871.4190
Fax 303.871.2500
Website npstc.du.edu

Member Organizations
American Association of State Highway and Transportation Officials
Association of Public Safety Communications Officials - International
Forestry Conservation Communications Association
International Association of Chiefs of Police
International Association of Emergency Managers
International Association of Fire Chiefs
International Association of Fish and Wildlife Agencies
International Municipal Signal Association
National Association of State Foresters
National Association of State Telecommunications Directors

Liaison Organizations
Federal Emergency Management Agency • Federal Law Enforcement Wireless Users Group • Public Safety Wireless Network • US Department of Agriculture • US Department of Interior

November 7, 2003

The Honorable Christopher Shays
U.S. House of Representatives
1126 Longworth House Office Building
Washington, DC 20515

The Honorable Adam Putnam
U.S. House of Representatives
506 Cannon House Office Building
Washington, DC 20515

Dear Chairman Shays and Chairman Putnam:

Thank you for the opportunity to appear before your subcommittees of the Committee on Government Reform on November 6, 2003, to address critical public safety interoperability issues.

I would like to take this opportunity to take issue with certain comments during the second panel made by Edmond Thomas, Chief Engineer of the Federal Communications Commission. In his opening statement, and in response to a question, Mr. Thomas indicated that public safety has 97 MHz of radio spectrum available. However, 24 MHz of that spectrum, in the 700 MHz band, is blocked in most metropolitan areas by television broadcast stations.

Similarly, in response to a question from Chairman Shays regarding the impact of incumbent broadcast stations in the 700 MHz band, Mr. Thomas indicated that the spectrum is available now in "most of the nation." The reality is that the spectrum is not available in most of the areas where it is need the most. Attached is a map, prepared by Motorola, which demonstrates the degree to which the spectrum is blocked throughout the Northeast, most of the Great Lakes region, most urban areas in the Southeast, and most of the heavily populated areas of California. Those are the areas where other public safety frequency bands are overcrowded, and additional radio spectrum would be of greatest value for addressing interoperability and other pressing public safety communications needs. Representative Jane Harman's opening statement addressed the need for Congress to correct that problem by establishing a firm date of 2006 to make that spectrum available nationwide.

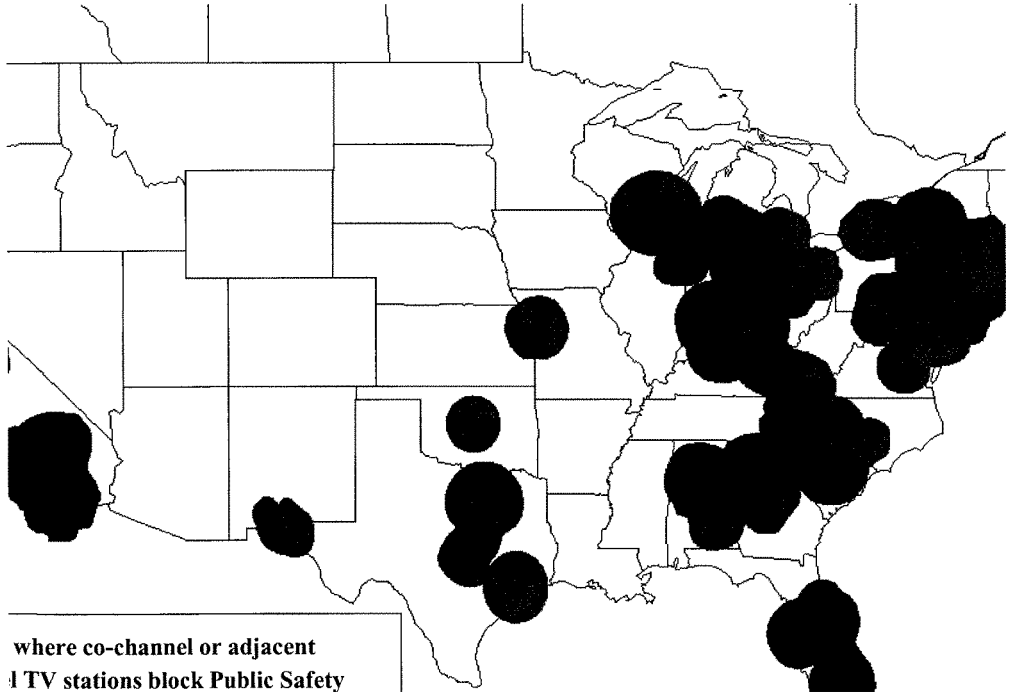
NPTSC and its member organizations look forward to working with you and your colleagues a
we join together to address the critical communications issues facing the public safety community. I
respectfully request that this letter be included in the record of the November 6, 2003 hearing.

Sincerely,

Marilyn Ward

cc: All Committee Members
Edmond Thomas
John Muleta

5 % of TV Stations Prevent 54% of U.S. Population from Having Improved Public Safety.



CAPWIN

Capital Wireless Integrated Network

Building a Bridge in Transportation and Public Safety and Communications

House Committee on Government Reform

Interoperability Hearing

Response to follow-up questions

1. *I understand that the CapWIN consortium comprises over 40 local, state and federal agencies. As a lesson in the reality of what it takes to integrate federal, state and local personnel to come to the table on long-range interoperability planning and then to agree, can you tell us some of hurdles you had to face in setting the ground work for CapWIN in the District of Columbia, Virginia and Maryland.*

CapWIN Response:

The CapWIN project has been underway since the fall of 1999. Since August 2002, the CapWIN "consortium" has been working very hard to implement an initial technological solution that will greatly enhance mobile data communications and that provides a solid foundation for future voice interoperability. It took over two and a half years from inception to start of implementation and the vast majority of this time was needed to establish and solidify the institutional partnership that "integrates" federal, state, and local personnel representing different jurisdictions, disciplines, and their respective agendas. Following is a list of "hurdles" that were faced in establishing the CapWIN partnership.

- ***Lack of Organizational Models.*** Given that CapWIN spans the State of Maryland, Commonwealth of Virginia, and the District of Columbia, and given the fact that the program involves law enforcement, fire and EMS, and transportation disciplines, it has been difficult to establish an organizational framework. This difficulty is exacerbated by the fact that there are no organizational models in the U.S. that are directly applicable to a program such as CapWIN. Traditionally, the public safety and transportation agencies in the Washington D.C. area are not used to working together with the Federal government to conceive, plan, design, and implement a public safety and transportation program initiative such as CapWIN on a regional basis. Perhaps, had such a model (or models) existed, the up-front time spent on institutional infrastructure could have been significantly reduced.

- ***New Business Relationships.*** Traditionally, agencies have been very protective concerning access to data from the "outside", particularly when it comes to criminal justice databases. CapWIN staff spent a great deal of time addressing the "we've never done that before so it can't be done" agency perspective. In some cases agency departments viewed provision of access to their data as relinquishing "control" of their system and the data contained therein. Fortunately, by getting all appropriate agency representatives together in the same room, we were able to work through most "turf" and "control" issues which set the stage for new business relationships that will allow unprecedented data sharing and access.

- ***Discipline Leadership.*** The CapWIN program is intended to serve multiple disciplines including law enforcement, fire service, emergency medical services, and transportation. While all of these disciplines play a critical role within the public safety first responder community, the question of which discipline is in the "lead" is a hurdle that requires constant attention. One of the reasons the CapWIN program has been successful is that, from a discipline perspective, it is an initiative based on a unified partnership as opposed to any one discipline being chosen as the "lead." Maintaining the unified partnership approach has

been a challenge given that initial sponsor funding was provided by Federal and State departments of transportation (with the implied connotation that transportation is "in the lead") and the implementation funding is being provided through the Department of Justice (connoting law enforcement as "the lead").

- ***Lack of Prior Communication Between Disciplines.*** Prior to the CapWIN program, many of the disciplines had never seriously discussed exchanging information. In addition, many did not know exactly what other disciplines had in terms of information that could benefit their own operational practices. For example, fire and police didn't know that transportation had roadway weather sensors and traffic data that would be valuable to their mission. In an effort to foster communications and partnerships amongst the various disciplines, CapWIN hired former fire, police, and transportation staff that had experience and creditability in the respective disciplines.

- ***Existing Systems.*** Some agencies have already invested heavily, for example, in mobile computing system hardware and software. In the early stages of planning for the CapWIN technical solution, it was extremely important to convey the message that, despite the technology to be implemented, agency investments in existing systems would be leveraged to the maximum extent possible. The CapWIN program would have been "dead in the water" if the proposed technical solution required agencies to spend limited resources to replace, upgrade, or retrofit their existing systems. Some agencies have already invested heavily, for example, in mobile computing system hardware and software.

- ***Outdated Technology.*** Existing systems (e.g., local criminal justice databases) are: outdated in terms of technology; are not based on any particular standards; have little to no support documentation; and perhaps most significantly, do not have adequate IT support staff for day-to-day system operational support. Lack of IT staff support is a critical issue facing all public safety agencies. Their staffs are already overwhelmed supporting daily operations, let alone trying to figure out how to interface with CapWIN. In some cases, existing systems are in the process of being updated (to meet NCIC 2000 standards) putting the interface to CapWIN "on hold" until the update is completed. All of these issues have impacted the CapWIN interface design process and overall implementation schedule.

- ***Lack of National Standards.*** During development of the RFP used to procure systems integration services, CapWIN and agency technical staff had difficulty identifying how various national standards efforts within the U.S. Department of Transportation and U.S. Department of Justice applied to the CapWIN technical solution. Compounding the problem, it was apparent that there was little coordination between Federal agencies in the development of national standards. We had to ask vendors to be prepared to implement standards from several disciplines that, while related, fell under the umbrella of varying processes, schedules, and standards development organizations. CapWIN, by necessity, has engaged a standards manager that has become actively involved in several standards efforts including Justice XML, transportation IEEE-1512, and others.

- ***Lack of Funding and Funding Coordination.*** The CapWIN program has been fortunate to receive funding support from Federal and state governments. Without initial "seed" funding, planning for CapWIN would likely never have gotten started. Certainly, without major funding support from Congress, the CapWIN program would not have advanced so quickly from concept to actual implementation of a real-world operational system. The reality, however, is not necessarily a lack of funding, but a lack of funding coordination and setting of multi-agency regional goals and priorities as opposed to traditional agency specific goals and priorities. To this day, the CapWIN program is grappling with the issue of determining where funding support will come from for day-to-day operations as well as system enhancements. Ultimately, agencies will be asked to provide ongoing support for CapWIN operations as the program works to become less reliant on Federal subsidies.

Despite these hurdles, the CapWIN Executive Board continues to change the culture of public safety and transportation agencies. Partner agencies are now talking about working together, sharing information and co-development of systems. This project had to build trust and relationships between agencies and disciplines. These agencies and disciplines are experiencing a paradigm shift that will have to take place throughout the country. CapWIN will serve as an example of what can happen if people work together as partners. This program will show the benefits of everyone working together for the common good of our citizens.

2. *Can you tell us what path your vendor faced to secure the CapWIN contract? Can you tell us how we might reform acquisition at the state and federal level to ensure that telecommunications and IT businesses are not faced with the current high level of risk as they provide products for the public safety community?*

CapWIN Response:

Like many information technology projects of CapWIN's scope, the path faced by IBM to secure the CapWIN contract was rather arduous (both to the contractor and the CapWIN technical staff working in conjunction with procurement officials). What follows is a high level overview of this path.

In spring of 2000, a request for information (RFI) was released to provide the private sector with the CapWIN concept for information sharing and improved communications in an effort to gather their feedback on feasibility, potential technology, applicable standards, and to what extent the existing technology "state of the practice" could provide a solution. CapWIN staff, working together with agency technical staff representing many disciplines, used the input from this RFI process to craft a request for proposal (RFP). The purpose of the RFP was to procure systems integration support services that would be used to plan, develop, and implement a CapWIN technical solution. In March of 2001, the CapWIN RFP was released. After two proposal submittal extensions, technical and financial proposals were submitted in July of 2001. Because the contractor chosen had to represent input from many stakeholders, the CapWIN RFP technical review committee had 20+ members. During the late summer and fall of 2001, the technical review committee met a number of times and, by December, came up with a short list of contractors that had the best technological solutions (ranked in terms of which solution was best from a technical perspective). Upon completion of the technical selection, financial proposals were opened and evaluated together with the technical

proposals. CapWIN used a "best value" approach which allowed selection of a higher priced proposal provided the technological solution was superior and could be justified. In the time period between December of 2001 and April 2001, negotiations with four contractors in the competitive range were completed and best and final offers were submitted. Because the procurement was done through the University of Maryland, the ultimate selection of a contractor had to be approved first by the University's Board of Regents (BOR) and then the Maryland Board of Public Works (BPW). The Maryland BPW is made up of the Governor, Comptroller, and Treasurer and they approve all service contracts over $500,000. Finally, in August 2002, BOR and BPW approval was obtained and a contract was awarded to the IBM Corporation.

From the CapWIN staff perspective, there are a number of ways systems acquisition could be improved to reduce the level of risk faced by the private sector as they provide products for the public safety community. The systems acquisition process is handled differently depending upon a number of factors, but the biggest one typically involves local and state procurement rules and regulations and associated federal procurement rules and regulations. In order to conduct these processes within these rules and regulations, a typical IT procurement project may take 1 to 2 years (or more) depending upon the scope and complexity. Because of the time required to carry out these procurements, private companies must invest significant time and resources as they compete for contract awards (all at their own risk). Ideas for reducing this risk include:

- ***Standard and Streamlined Acquisition Processes.*** Develop streamlined acquisition procedures that are to be used as a standard for all agencies procuring IT services and technology for public safety. These streamlined procedures could be mandated in federal grant awards to state and local agencies. For projects of critical importance (perhaps those with direct homeland security implications) consider allowing for initiating direct negotiations with a short list of pre-qualified technical contactors.

- ***Model RFP's.*** Many of the problems related to system acquisition stem from public agencies not knowing how to develop good request for proposals. Model RFP's could be developed that include good examples of contract clauses that facilitate post award acquisition and contract administration. For example, services that focus on planning and design are typically best conducted using time and materials as opposed to firm fixed price. By matching the appropriate contract type with the scope of work, the private sector's risk is reduced.

  Project SAFECOM can have a major impact in this area by assisting local, state, and federal agencies with developing system requirements and provisions within request for proposals. The public safety community has traditionally not told the private sector what they need. Rather, they gear their system acquisitions to what is currently available from the private sector (typically proprietary systems). This focus by SAFECOM could save resources for both the private and public sectors. New interoperability communication initiatives will benefit tremendously from the positive and negative experiences ("lessons learned") from all existing programs.

- ***Compensate Private Sector for their Participation in the Acquisition Process.*** Projects with an extensive scope and technical complexity may take a long time to procure even with streamlined processes. In some circumstances, holding a

"design competition" in which a short list of private companies are compensated for their time and effort, may be warranted (similar to what DOD does, but on a smaller scale).

- ***Private sector needs to focus on "open systems" in the future.*** The private sector has traditionally offered very proprietary systems to the public safety community. These systems are not based on internet protocols or open standards. The private sector can design systems based on industry standards and be better positioned to meet the needs of the public safety community by delivering systems that meet the need to solve agency interoperability problems. Ultimately, delivering standards based open systems will reduce private sector risk by providing the public safety community with solutions that they need rather than trying to force existing proprietary systems on their customers.

3. *Many first responders and those that represent them have deep concerns about continued funding of communications systems, let alone large regional networks like CapWIN ... they are concerned with the continuation of federal state and local funding to the program as well as the costs of upgrades, maintenance and continued training of first responder personnel. Does CapWIN have the same concerns?*

CapWIN Response:

CapWIN certainly shares the same concerns. While CapWIN is extremely fortunate to have had the federal funding support that allowed us to quickly take a project from concept to implementation, the question of where long term capital and operational funding support will come from is a high priority planning task. The majority of CapWIN funding to-date (approximately 85%) has gone towards capital costs associated with system development and implementation and setting up a facility to support ongoing operations. The remainder has gone largely towards operations. In order to continue operational support for the system that is being deployed, funding on the order of $4 million per year will be required. This level of funding assumes only a minimal amount allotted for enhancing system functionality or system expansion. If system functionality enhancement and expansion is taken into account, at least twice this amount is required (on an annual basis).

Since CapWIN's inception, the Executive Leadership Group has been made aware of the future need to address cost sharing between all participating agencies. Recently, this Group has suggested creation of a task force to review potential funding models including agency cost sharing. The models will likely include a mix of federal, state, and local agency funding. While some may argue that the federal investment has already been made, given that federal agencies will continue to be key operational users of the CapWIN system, there will always be a need for a federal funding contribution. Further, given the location of CapWIN in the National Capital Region and the likely demands for CapWIN in the event of a national security threat, continued federal funding is critical for this program. Of course, we all recognize that CapWIN will not be able to rely exclusively on Federal funding forever. Future funding models will have to allocate a share (on a formula to be determined) of the ongoing operational cost to the participating operational agencies.

However, it is critical to point out that, while CapWIN has come along way in a relatively short period of time, it is still very much a fledgling program that needs continued high

level federal funding support for the next three years. This time period will allow CapWIN to continue generating public agency support and to determine a mixed agency funding model that can be agreed upon by participating agencies. It will also allow public safety and transportation agencies to properly plan for their share of CapWIN operational costs by allowing adequate lead time to build these costs into state and local budgets.

Programs like CapWIN need help in funding, particularly as they are getting started and through the early stages of deployment and operations so that the programs can take "root". Congress can play a key role in solving the interoperability problem by encouraging regional and statewide partnerships and by supporting SAFECOM in their efforts to exploit the successes and challenges of CapWIN as similar initiatives are implemented in other areas of the country. By working together, we can make a difference!

CAPWIN

Capital Wireless Integrated Network

Building a Bridge in Transportation and Public Safety and Communications

The SAFECOM Program & CapWIN

Introduction

In response to the Congressional inquiry that CapWIN received, the following provides background information on CapWIN's relationship with SAFECOM, the umbrella program within the Federal government to help local, tribal, State and Federal public safety agencies improve public safety response through more effective and efficient interoperable wireless communications. This document also provides CapWIN's current perspective on SAFECOM, and the need for continued support of public safety communications and interoperability issues.

CapWIN's Relationship with SAFECOM

Let me begin by describing the past management of SAFECOM. Despite good intentions, SAFECOM took a great deal of time to garner support from local and State public safety representatives. This delay and set back was a direct result of poor program management, in which the first two program managers exerted typical "federal" approaches in which they espoused their solutions to local and State communications issues *without* incorporating local and State public safety representatives in the dialogues. This unproductive "federal" approach changed, however, with the advent of the third, current program manager.

CapWin's relationship with SAFECOM began approximately eighteen months ago when CapWIN staff was asked to provide a briefing to the first director of SAFECOM. The director at that time asked why CapWIN should be held up as a "national model," considering that he had the solutions required to solve the problem of communications interoperability. Needless to say, his attitude and strategic vision did not leave a good impression. SAFECOM appeared to be yet another federal program that was destined to fail because the leadership didn't understand the real issues and didn't want to listen to local and State representatives who had the knowledge and expertise. After the briefing though, the director indicated that he wanted to be a part of the CapWIN leadership structure; however, we never heard from him again.

About a year ago, I heard from the next director of SAFECOM. She seemed to have a better attitude and wanted to work with us. But again, after briefing her on several occasions, we never saw any tangible results. Despite all of this, CapWIN continued to

move forward developing a governance structure and a technology solution without the involvement of SAFECOM. We were, however, more than adequately supported by the Virginia Department of Transportation, Maryland Department of Transportation, U.S. Department of Transportation, and AGILE Program within the National Institute of Justice. Dr. David Boyd was the overall supervisor for AGILE and was well respected in the public safety community. In our very first meeting, he agreed that the governance of CapWIN had to involve local, State, and Federal agencies. Dr. Boyd understood that the solutions to solving the problem of interoperability cannot be solved solely through a federal program, but rather, through a partnership of all public safety stakeholders.

Hence when Dr. Boyd became the third and current director of SAFECOM, State and local public safety associations were glad to see SAFECOM take a partnership approach to issues of communication and interoperability. CapWIN began its relationship with SAFECOM anew as CapWIN staff was asked to help develop a strategic plan and share our experiences about development of a governance structure involving Federal, State, and local agencies spanning multiple jurisdictions and disciplines. SAFECOM reached out for assistance from the International Association of Chiefs of Police, International Association of Fire Chiefs and other public safety organizations to provide input into the strategic development process. It became apparent that the user community was excited about this new leadership and the change in attitude from "let me tell you how to do it" to "how can we work together to get it done." The door to communications interoperability has been opened wide to all parties with a stake in the SAFECOM Program.

SAFECOM has an Executive Board that is made up of local, State, and Federal representatives from the major public safety and government organizations. This board is responsible for setting priorities, goals, and reviewing the progress of the program. The board makeup enables SAFECOM to get input from the entire public safety community. SAFECOM in turn takes the public safety input and relates it directly to its program areas of technology solutions, standards, federal coordination, technical assistance, policy, and outreach. Within these broad program areas, CapWIN is supported by, and provides support to, SAFECOM through a partnership that allows for sharing lessons learned and technology solutions throughout the national public safety community.

I believe the first step of solving the problem of interoperability is the development of partnerships… people sitting down and working together. SAFECOM provides a national example of how people can work together to solve complex issues and I believe that many government agencies can learn from this example.

Observations

- Many small public safety agencies don't have any expertise in communications technology and depend on vendors and consultants to "give them what they need". This approach leads to problems and wrong information. SAFECOM can help these departments understand the importance of standards and open systems. Subject-matter experts can help agencies understand just what they are buying

and the long term effect of their purchase. Agencies can be educated as to the right questions to ask and what individual technologies are capable of doing.

- Standards setting efforts affecting the public safety community are underway within many federal agencies and departments. State and local agencies are often confused about which standards are relevant to their project. Further, these same agencies are being asked to coordinate their implementation efforts and not develop "stove-pipe" systems; however, this request is coming from federal agencies that are not coordinating the administration of their own programs and initiatives. SAFECOM helps demonstrate, by example, the leadership of the federal government in how public safety interoperability efforts can be coordinated to avoid duplication, implementation of conflicting standards, and lack of standards in many areas. Through SAFECOM standards efforts can be coordinated at the national level and ultimately, as new systems come on line, interoperability issues will be resolved.

- The SAFECOM partnership needs to continue and be enhanced to develop new and innovative technologies to solve problems. With every level of government playing together, all interoperability aspects can be considered together as a whole instead of in individual pieces leading to deployment of systems that work with each other as opposed to against each other. For example, if all federal grants insisted on using the same coordinated grant guidance that SAFECOM successfully developed for use in the COPS and FEMA FY03 grants, local and State public safety agencies would benefit from a decrease in stovepiped communication systems supported by diverse federal funding requirements. But promoting this type of coordination requires legislative support as well so that agencies across the government realize the benefit of coordination and unnecessary duplication of efforts.

Closing

I would like to thank the committee for listening to my concerns about these issues. The public safety community needs help in resolving the many complex issues they must address on a day-to-day, month-to-month, and year-to-year basis. I would encourage Congress to become actively involved by supporting and partnering with programs like SAFECOM. Working together, we can move mountains and resolve the issues.

Thank you

George Ake

U.S. House of Representatives
Government Reform Committee
Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census

First Responder Interoperability: Can You Hear Me Now?
Hearing on Project SafeCom
Thursday, November 6, 2003

Statement for the Record
Submitted by the
United Telecom Council (UTC)

Founded in 1948, the United Telecom Council (UTC) represents the telecommunications interests, both voice and data, of electric and gas utilities, water companies, gas pipelines and other critical infrastructure entities, along with their technology partners. UTC is a global federation of direct business members and affiliated trade associations representing over 10,000 organizations serving all corners of the world and virtually every community in North America. Its several hundred critical infrastructure members range in size from multi-state organizations such as American Electric Power in the Midwest and Entergy in the South, to municipally owned utilities and co-ops operating in cities, towns and rural areas throughout the country. All of these companies own, maintain and operate mission-critical communications systems. Most importantly for purposes of this hearing, these include two-way land mobile radio systems on which we all rely for both routine and emergency communications.

Critical Infrastructure Communications Affect Homeland Security

All critical infrastructure industries are becoming increasingly dependent on information management and private internal communications systems to control and maintain their operations. A 2002 study by the National Telecommunications and Information

Administration (NTIA), entitled, "Current and Future Use of Spectrum by the Energy, Water and Railroad Industries," makes very clear the extent of this dependency to meet essential operational, management and control functions.[1] In fact, the physical components of the energy and water production, supply and delivery networks can be wholly intact but rendered virtually useless through control or incapacitation of these internal communications systems.

All parties concerned with homeland security agree that one of the most important considerations is the availability of reliable communications for emergency responders. In this regard, there are three important issues which need to be addressed: 1) The critical players that require such communications include not only the first responders from the public safety community, but also the critical infrastructure enterprises such as power and water utilities which must provide a first line of defense; 2) We must ensure effective and interoperable communications between and among the communities of public safety responders and critical infrastructure enterprises; and 3) Government oversight of the communications facilities and services relied upon by various emergency response personnel, which is now shared between the FCC and NTIA, must be streamlined to ensure effective protection from interference as well as interoperability.

Emergency Responder Communications

It is understood that local and state police and fire personnel are among the first responders to an emergency, as well as emergency health care workers. But critical

[1] A copy of the Executive Summary of the NTIA Study is included as Attachment A to this document. The full study can be found at http://www.ntia.doc.gov/osmhome/reports/sp0149/sp0149.pdf.

infrastructure employees – the emergency utility workers – are often overlooked as vital to any emergency response. Along with protecting life, the first order of business following a manmade or natural disaster is the restoration of essential public services, including water (to fight fires and ensure clean and safe supplies), gas and electricity (first to shut down utilities to ensure the safety of affected areas, then to restore heat, light and energy generation capabilities). These are the first services that must be dealt with, so these workers are among the first personnel on the scene.

The experience of several significant emergency events serves to illustrate the importance and built-in reliability of critical infrastructure communications systems as well as the key role they play during any emergency response effort. As soon as the magnitude of the 9/11 disaster became apparent, more than 1900 Consolidated Edison emergency workers were dispatched to Ground Zero to assist critical service restoration efforts and provide emergency communications capabilities to others on the scene. ConEd's two-way land mobile radio system was among the only communications available and was widely used during the first few hours following the collapse of the Twin Towers.

Earlier this year, Consumers Energy of Michigan was called on to respond to two major storms. On April 3rd, an ice storm swept across Michigan's lower peninsula, resulting in 425,000 customers without power and over 10,500 "wire down" calls. All available Consumers Energy crews and available contractors were put into the field, along with over 125 electric line crews from neighboring utilities.

On May 11th through May 12th, strong winds in excess of 50 miles per hour hit Lower Michigan. Electric service to 101,000 customers was disrupted and over 2,200 reports of down wires were received and resolved. Massive communications resources were required, all coordinated via Consumers' 800 MHz trunked radio system. Only by having a reliable, private two-way radio system was Consumers Energy able to adequately respond to such emergencies.

More recently, the blackout event of August 14th created major power disruptions in the upper Midwest and Northeast U.S., along with southeastern Canada. In the largest event of its kind experienced on this continent, the blackout left an estimated 50 million customers without electric power. More than one hundred generating plants were pulled off line in the two countries, including 22 nuclear plants.

Investigations of the massively complex event are ongoing. But of particular relevance to today's hearing are the trends revealed by UTC's examination of the performance of its members' telecom systems in comparison to those of the affected region's commercial telecommunications networks in general:

- The telecom systems of UTC Members in the affected region performed almost flawlessly, both in confining the scope of the blackout and in coordinating the networked response of the restoration effort.
- UTC members reported extremely limited disruptions to their private telecommunications networks, with the rare outage attributed to the loss of a line leased from a commercial carrier. All impacted members we contacted

reported little or no disruption to their private wireless networks, either voice or data.

- New York City utility Consolidated Edison reported that its 800 MHz digital network and 900 MHz Multiple Address Service SCADA systems remained operational throughout the event.
- One major Northeastern utility was able to restore power to the one million affected of its over two million customers by noon the next day, due to the fact that its 900 MHz trunked system operated continuously throughout the event.
- The sustained reliability of utility private networks aided greatly in the coordinated response that service restoration required.

By contrast, although major Internet and wireline communications facilities were able to sustain the increased system stress, commercial wireless systems in the affected region experienced major failures.

- Major commercial wireless carriers experienced service disruptions of 75% or more due to lack of or insufficient backup power systems at cell sites. The average cell site has battery backup for about four hours, less with increased traffic.
- 33% of all cellular customers across the affected regions had no service for the first 24 hours of the event.
- 800 MHz carrier Nextel experienced widespread outages throughout the entire affected region, due to its lack of backup power at cell sites.
- Other wireless carriers experienced service disruptions due to call volumes that exceeded three times the average daily traffic.

- According to recent Congressional testimony, Homeland Security officials in Detroit, depending on commercial wireless systems to coordinate with public safety and other public agencies, were simply unable to do so due to outages. There simply was no service.

These events serve to illustrate that utilities' wireless systems remain well prepared for emergencies due to their robustness and various backup contingencies, and can make better partners for traditional Public Safety agencies and other emergency responders than commercial wireless offerings.

To meet the needs for which they are designed, the most important aspect of critical infrastructure's radio systems is reliability – unlike commercial service providers, utilities build their systems for 24-7 and "five 9s" operation. Critical infrastructure entities use the same kind of radio equipment as public safety agencies, and as fellow emergency responders, these personnel understand traditional public safety communications needs better than any other industry. The job of an electric lineman for decades was considered the most dangerous in the nation, and continues to rank among the top ten. In fact, during the utility restoration efforts following Hurricane Isabel, two electric linemen lost their lives, far away from home, working under extremely hazardous conditions to restore basic services to the public.

Utility line crews rely on their radios just as police and fire personnel do. And these people have one additional element of reliability built into their radio systems beyond that of traditional public safety: their radios must work, wherever their crews go, **when the power is out and under the most extreme circumstances.**

The examples cited above are proof positive that utilities and other critical infrastructure systems should play a key role in designing and participating in a robust, reliable and ubiquitous emergency radio communications system. During any kind of manmade or natural disaster, you will see police, fire, utility and other emergency personnel on the scene at the same time. **Any discussion of emergency interoperability must include critical infrastructure if the United States is to have an effective system.** The White House has recognized this fact and has urged UTC's inclusion in energy, water and telecommunications sector work on Homeland Security.

Local Efforts Toward Interoperability

Congress recognized the importance of our systems in 1997, when utilities, pipelines and other critical infrastructure were categorized as "public safety radio services," i.e., those private systems that provide support to such vital systems that entities operating them should have access to spectrum without obtaining it via auction. Since then, critical infrastructure has not sought access to existing public safety spectrum; however, the FCC has not made a separate allocation to non-public safety private wireless since 1985. Therefore, UTC and its members have looked for opportunities to bolster interoperability among all emergency responders by other means. The most effective means on a local basis has been through shared radio systems, and there are dozens of these throughout the country. Many of them have been built by utilities, because these entities often can get the system funded and into operation faster than public safety agencies. And – these entities build their systems so they work when the power is out.

Just a few examples of shared systems: Gainesville, Florida, where Gainesville Regional Utilities has built and maintains a non-profit, shared 800 MHz system. Local public safety agencies use this system as low-cost subscribers. There are many municipalities, as throughout the Philadelphia metro area, where local utilities and public safety agencies share a common radio system owned by the local government.

In Mississippi, Alabama, Georgia and the Florida Gulf Coast, Southern Company has built a commercial 800 MHz system to utility standards, making it attractive to thousands of public safety users, as well. A system like Southern's is the *only* form of commercial system appropriate for mission-critical communications, since utilities must have complete coverage of their service territories, as well as guaranteed reliability at all times. No consumer-oriented commercial wireless provider can afford to offer service to this standard, nor do commercial systems continue to function during power outages of any duration.[2]

However, these shared systems are only local attempts to solve interoperability problems, and the United States needs a nationwide solution so that *all* emergency responders can communicate with each other. We offer our expertise to help reach this vital goal.

Critical Infrastructure Can Play a Significant Role in Providing an Interoperable Nationwide Emergency Communication System for All Emergency Responders

[2] The Subcommittee should take notice that programs promoting commercial wireless providers for Wireless Priority Access Service are completely useless to critical infrastructure. Under the FCC's system of five tiers of priority, critical infrastructure is fourth out of five, meaning that communications among many emergency personnel would be dubious at best. Moreover, when overloaded with traffic during a disaster or simply shut down during extended power outages, commercial service is useless to critical service restoration personnel and should be considered useless for public safety personnel, as well.

Critical infrastructure industries have the same needs as public safety or first responders in terms of reliability, robustness and ubiquity of coverage, elements that are not provided by commercial systems or the Wireless Priority Access Service that is promoted so heavily by the Federal Communications Commission. With a small, exclusive allocation of six to ten MHz of spectrum (one-third the spectrum of one PCS license), critical infrastructure can construct a nationwide system that would be available to multiple utilities that respond to regional emergencies, as well as traditional public safety, federal agencies and others. This could be achieved through the availability of additional equipment, or as part of a "network of networks."

This allocation of spectrum to critical infrastructure for the establishment of a nationwide emergency communications network would achieve three objectives: 1) economies of scale would drive down the cost of equipment; 2) efficient spectrum use would dictate the use of this spectrum on a day-to-day basis for critical infrastructure operations support, which would be responsible for maintaining the emergency network; and 3) emergency response capability would be served by all response agencies having immediate access to fully operational communications equipment, priority access and a completely reliable, fully interoperable network when the need arose. A very good home for this system would be on the 700 MHz band, on spectrum adjacent to the 24 MHz allocated to public safety. UTC includes an overview of this proposal in our written statement.[3]

[3] Included as Attachment B.

In summary, while federal initiatives including SafeCom are pursuing the very laudable goal of national interoperability for emergency response situations, those efforts should include all segments of the emergency response community to be a truly effective and efficient means for instituting a nationwide emergency response communications system. Moreover, reliance on commercial systems for this purpose is misplaced: they do not have the robustness, reliability or ubiquitous coverage of those networks built and maintained by critical infrastructure companies. In addition, contiguous allocations of spectrum for public safety and critical infrastructure, particularly in the 700 MHz band, would facilitate the construction of shared public safety/ critical infrastructure systems with designed interoperability for emergency purposes -- at minimal federal expense and optimum spectral efficiency.

The FCC's 800 MHz Proceeding

Hundreds of mission-critical utility radio systems – including most of the largest non-commercial systems on the band -- are operated on the 800 MHz private land mobile radio (PLMR) frequency band. Such systems are of varying age and technological sophistication, from analog conventional use to advanced digital systems that incorporate voice and data transmissions. Several utilities are deploying such advanced systems across wide areas, with expectations of using them for, not only routine and emergency field communications in support of service and power restoration, but also for key telemetry systems that actually control the nation's power and water infrastructures. Because of the ability to use frequencies exclusively within a licensed area, coupled with the variety of equipment manufactured, the 800 MHz band is

probably the most important PLMR band currently available for critical infrastructure communications, especially for entities seeking to deploy more advanced technology.

800 MHz interference is not only a public safety problem. Many UTC members operating on this band also have suffered interference, almost exclusively from Nextel's system. A prime example is Consumer's Energy in Michigan, which has had to resolve a number of interference problems: it has done so through use of engineering solutions such as those found in the "Best Practices" guide.

However, interference resolution alone is not enough. UTC is a leading member of the 800 MHz User Coalition, which has submitted an alternative position to Nextel's.[4] More than 50 parties, including several public safety agencies, trade associations, individual critical infrastructure entities, small commercial carriers and the cellular industry, have already signed on to the Coalition document, filed on May 29, 2003, and dozens more have filed supporting statements. Claims by Nextel and its supporters that its "consensus" plan is supported by a vast majority of affected licensees are simply untrue.

The User Coalition stresses that interference to *all* user systems must be resolved, at the cost of the interfering licensee – and that future interference must be prevented through improved engineering practices, as well as regulatory flexibility that enables "channel swaps" and shared systems. Mandatory rebanding is an inefficient, overly expensive and ultimately, ineffective solution, since interference would still be present at

[4] A copy of the 800 MHz User Coalition filing, with current supporters, is included as Attachment C to this document.

the end of the process. Moreover, rebanding designed to separate "compatible systems from incompatible ones" only freezes a moment in time: these systems are not static, and migration to better technology continues to change the landscape. Moreover, in spite of FCC policy directions in favor of better spectrum efficiency, less detailed regulation and market-based solutions, the Nextel plan would require a massive, four-year (at the minimum) reshuffling of the entire band, placing all licensees in restricted space and resulting in only Nextel being able to deploy advanced technology and better spectrum efficiency. To many utilities already building digital wide-area systems for themselves and their communities, this is unacceptable. UTC and dozens of our member companies have opposed the Nextel plan consistently, as have many public safety agencies. Such restrictions only scratch the surface of the User Coalition parties' concerns about the Nextel "consensus" plan: there are serious questions about the FCC's authority to implement the plan, and challenges are likely should it be adopted. This band is too important to all its users; the solution for interference must be one that keeps it fit for the future of all of those that depend upon it.

Attachment A

CURRENT AND FUTURE SPECTRUM USE BY THE ENERGY, WATER, AND RAILROAD INDUSTRIES

Response to Title II of the Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 2001 Public Law 106-553

U.S. DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration

NTIA SPECIAL PUBLICATION 01-49

CURRENT AND FUTURE SPECTRUM USE BY THE ENERGY, WATER, AND RAILROAD INDUSTRIES

Response to Title II of the Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 2001 Public Law 106-553

Marshall W. Ross
Jeng F. Mao

U.S. DEPARTMENT OF COMMERCE
Donald L. Evans, Secretary

Nancy J. Victory, Assistant Secretary
for Communications and Information, and
Administrator, National Telecommunications
and Information Administration

January 2002

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS xiii

EXECUTIVE SUMMARY xvii

1 INTRODUCTION 1-1
Background 1-1
Objective 1-2
Approach 1-2
Letter Soliciting Responses from Federal Agencies 1-3
Request for Comments from the Public 1-4
Report Overview 1-4

2 CERTIFIED FREQUENCY COORDINATORS AND FEDERAL REGULATORY AGENCIES 2-1
Background 2-1
Certified Frequency Coordinators 2-1
The Energy Industry 2-3
The Water Industry 2-5
The Railroad Industry 2-5
Federal Regulatory Agencies 2-5
The Energy Industry 2-6
The Water Industry 2-6
The Railroad Industry 2-7

3 THE ENERGY INDUSTRY 3-1
Background 3-1
Industry Growth 3-4
Consumer Demand and Industry Trends 3-4
Deregulation 3-5
Wireless Communications Infrastructure 3-7
Voice Requirements 3-8
Data Requirements 3-9
Wire-Based and Commercial Services 3-12
Fiber Optic 3-12
Power Line Carrier 3-14
Commercial Telephone Lines 3-15
Commercial Wireless Telephones 3-15
Cellular Digital Packet Data 3-17
Summary of Spectrum and Systems Currently Used 3-17
Technical Issues 3-18
Technology Trends 3-21

Trunked Radio Systems 3-21
Wideband Data Technology 3-21
Wireless LAN/WAN Connectivity 3-22
Geographic Position and Automatic Location Data 3-22
Summary of Non-Spectrum Dependent Alternatives and Commercial Services 3-23
Possible Future Spectrum Requirements 3-24
Possible Future Alternative Technologies 3-25

4 THE WATER INDUSTRY 4-1
Background 4-1
Industry Growth 4-2
Wireless Communications Infrastructure 4-3
Voice Requirements 4-4
Data Requirements 4-4
Wire-Based and Commercial Services 4-5
Summary of Spectrum and Systems Currently Used 4-5
Technical Issues 4-6
Technology Trends 4-7
Summary of Non-Spectrum Dependent Alternatives and Commercial Services 4-8
Possible Future Spectrum Requirements 4-9

5 THE RAILROAD INDUSTRY 5-1
Background 5-1
Industry Growth 5-3
Wireless Communications Infrastructure 5-4
Voice Requirements 5-4
Data Requirements 5-5
Wire-Based and Commercial Services 5-6
Summary of Spectrum and Systems Currently Used 5-7
Technical Issues 5-8
Technology Trends 5-9
Summary of Non-Spectrum Dependent Alternatives and Commercial Services 5-10
Possible Future Spectrum Requirements 5-10

6 SUMMARY OF CURRENT SPECTRUM USE AND FUTURE REQUIREMENTS 6-1
Current Spectrum Used 6-1
Future Spectrum Requirements 6-1
Availability of 700 MHz Guard Band Spectrum 6-3

7 SUMMARY/CONCLUSION 7-1
Introduction 7-1
Summary 7-1
Conclusions 7-3

APPENDICES

A PL 106-553; Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 2001 ..... A-1
B NTIA Request for Comments Published in the Federal Register B-1
C Copy of Letter Sent to Federal Agencies C-1
D Public Comment and Federal Agency Respondents D-1
E Railroad Base Station Map E-1
F Executive Summary of the USAT Final Report F-1

EXECUTIVE SUMMARY

BACKGROUND

Public Law 106-553, The Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, requires the National Telecommunications and Information Administration (NTIA) to consult with other federal agencies and departments responsible for regulating the core operations of entities engaged in the provision of energy, water, and railroad services and to report to Congress no later than one year after the Act's enactment on the current and future use of spectrum by these entities to protect and maintain the Nation's critical infrastructure.

NTIA employed the following methodology to facilitate and expedite the information gathering process from the energy, water, and railroad industries: representative trade organizations; and federal agencies with regulatory oversight of these industries:

- A Request for Comments, with a 60-day comment period, was published in the *Federal Register* on April 9, 2001. NTIA received a total of 19 responses from members of the utilities industry and various trade organizations. The membership of these trade organizations represents major segments of the energy, water, and railroad industries. This report contains a compilation of the responses received to the Request for Comments.

- A letter was sent to Executive Branch agencies that exercise oversight of these industries containing specific questions pertaining to the current and future spectrum requirements of providers of energy, water, and railroad services.

NTIA reviewed the information collected through comments, reports, and other sources of information. NTIA presents its findings in this report based upon such data. NTIA found that providers of energy, water and railroad services submitting comments for this report had concerns regarding their current and future spectrum requirements. In addition, federal agencies who regulate the core operations of these industries (or some aspect of those operations) generally concur with comments by the industry and its representative trade organizations. Specifically, these comments disclosed the following key issues regarding spectrum usage by these industries.

- Continued use of spectrum is essential to the current and future operations of these industries, taking into account industry trends and advances in wireless telecommunications technology. Providers of energy, water and railroad services are vital components of the nation's critical infrastructure.

- Problems of interference caused by congestion in the land mobile portion of the spectrum currently utilized was the issue mentioned most frequently by commenters. The issue of exclusivity (e.g., spectrum that is allocated for specific services) was a key thread throughout the comments.

- According to industry, reliance on commercial services for mission critical functions is hampered by insufficient coverage, reliability, redundancy, and robustness. Additionally, the high cost of commercial wireless services and wireline technologies affect reliance on these technologies.

- Almost all commenters mentioned general frequency bands (e.g., 2.4 GHz and 5 GHz bands) currently used, instead of identifying specific frequencies.

- Many commenters were not specific as to whether spectrum-efficient technology such as trunked systems and narrowbanding are used on currently assigned frequency bands or channels. However, there were notable exceptions, such as the American Association of Railroads' decision to implement the Association of Public Safety Communications Officials' Project 25 protocols to develop a rechannelization plan for its 160 MHz radios.

CURRENT SPECTRUM USE

Currently, the energy, water, and railroad industries use spectrum between 20 megahertz (MHz) and 25 gigahertz (GHz). Although they use numerous frequencies in a variety of bands, all three industries agreed and informed NTIA that spectrum currently used is either congested or quickly approaching critical mass, thus leading to problems of interference.

The technologies and applications used in these bands are vital to the core operations of these industries. Furthermore, in 1996 (by Executive Order No. 13010), President Clinton recognized the railroad, water and energy industries as part of the Nation's critical infrastructure. These entities provide commodities and services that are essential to daily life. Table 1 illustrates the three industries and the spectrum and applications currently used by each.

POSSIBLE FUTURE SPECTRUM REQUIREMENTS

The energy, water, and railroad industries submitted to NTIA suggestions to alleviate their claim of congestion and lack of new spectrum. There is no consensus among the commenters as to where new spectrum can be reallocated or obtained. However, there is consensus that additional spectrum is needed due to what they perceive as current congestion and lack of additional spectrum available for their respective industries. Table 2, on page xx in this section, summarizes the spectrum bands where the energy, water, and railroad industries believe their frequency requirements need to be addressed.

Table 1
Spectrum and Applications Currently Used as Indicated by Commenters

	Energy Industry	Water Industry	Railroad Industry
20 MHz	25-50 MHz: PLMRS		
40 MHz	48-50 MHz: Voice Dispatch, Alarms From Remote		
50 MHz	50 MHz Band: PLMRS, MAS		
100 MHz	150-170 MHz: Voice Dispatch, Load Management Control 150-175 MHz: Alarms From Remote Substations, PLMRS		160.215-161.565 MHz: FM Equipment
200 MHz	220 MHz: SCADA		
400 MHz	450-470 MHz: Voice Dispatch, Mobile Data, PLMRS 470-512 MHz: PLMRS		450-460 MHz: End of Train Devices
800 MHz	800 MHz Band: Voice Dispatch, Mobile Data Terminals, Trunked PLMRS 806-821 MHz: PLMRS; 821-824 MHz: PLMRS 851-866 MHz: PLMRS, 866-896 MHz: PLMRS 896-901 MHz: PLMRS		896 MHz: ATCS/PTC
900 MHz	900 MHz Band: MAS 902-928 MHz: SCADA 928-929 MHz: POFS 928-932 MH MHz: MAS; 952-956, 959 MHz: MAS 928-952 MHz: SCADA, 929-930 MHz: PLMRS, 932-935 MHz 932-941 MHz: SCADA; 935-940 MHz, PLMRS, 941-944 MHz, 952-960 MHz: POFS, 956 MHz, Mobile Meter Reading	900 MHz Band: MAS, SCADA 928 MHz: M&S 952 MHz: MAS 956 MHz: MAS	902-928 MHz: LMS 928 MHz: MAS 896 MHz: ATCS/PTC 952 MHz, 956 MHz, MAS
1 GHz	1.427-1.432 GHz, AMR; 1.85-1.99 GHz: POFS		
2 GHz	2 GHz Band, PLMRS, POFS, MAS, SCADA, Point-to-Point 2.4 GHz Band, Point-to-Point Microwave	2 GHz Band,[1] Water Operations Network	2 GHz Band,[2] Point-to-Point Microwave
5 GHz	5 GHz Band, Spread Spectrum 5.8 GHz, 5.9-6.4 GHz, Point-to-Point Microwave		
6 GHz	6 GHz Band, Point-to-Point Microwave 6.5-6.8 GHz, Point-to-Point Microwave 6.525-6.875 GHz, POFS	6 GHz Band, Water Operations Network	6 GHz Band,[3] Point-to-Point Microwave
11 GHz	11 GHz Band,[4] Point-to-Point Microwave		11 GHz Band,[5] Point-to-Point Microwave
18 GHz	18-19 GHz, Point-to-Point Microwave		18 GHz Band,[7] Point-to-Point Microwave
21 GHz	21.2-23.6 GHz, POFS		
23 GHz		23 GHz Band,[8] Water Operations Network	
24 GHz	24.25-25.25 GHz, POFS		

1) 2.11-2.2 GHz, 2.45-2.5 GHz and 2.65-2.69 GHz. 47 CFR § 101.147(s).
2) *Id.*
3) 5.925-6.875 GHz. 47 CFR § 101.147(s).
4) *Id.*
5) 10.7-12.2 GHz. 47 CFR § 101.147(s).
6) *Id.*
7) 18-19 GHz. 47 CFR § 101.147(s).
8) 23-23.6 GHz. 47 CFR § 101.147(s).

Table 2
Summary of Frequency Bands That Could Be Used as Indicated by Commenters

Energy Industry	Water Industry	Railroad Industry
220 MHz Band	216-220 MHz Band	700 MHz Band[1]
450 MHz Band	6 GHz Band	1.4 GHz Band
800 MHz Band	11 GHz Band	
900 MHz Band	23 GHz Band	
1427-1432 MHz Band		
1-12 GHz Band		

[1] Although the AAR mentioned the 700 MHz Guard Band, this spectrum will also be available to the energy and water industries by leasing spectrum from the "Guard Band Managers." More information on the 700 MHz band can be found on page 6-7.

The Energy Industry

The United Telecom Council, in its joint comments, recommends that exclusive spectrum for utilities be allocated in the 450 MHz, 800 MHz, and 900 MHz bands for voice and data communications. DTE Energy states that unused television channels should be allocated to utilities on a low powered non-interfering basis for voice and data communications and recommends access to bands between 1 GHz and 12 GHz for fixed narrow and medium-wide data channels as other preferred spectrum.

Itron, Inc., suggests that the 1427-1432 MHz band should be licensed for utility telemetry services such as Automatic Meter Reader and Supervisory Control and Data Acquisition. The National Rural Telecommunications Council states that access to the 220 MHz band for Supervisory Control and Data Aquisition applications allows rural electric and telephone cooperatives to transmit telemetry data over wide distances at reduced costs when compared to land line or high frequency wireless alternatives.

The Water Industry

The American Water Works Association believes the United Telecom Council's Utilities Spectrum Assessment Taskforce Final Report (1998) underestimated spectrum requirements for the utilities industries based on industry trends and the pace of telecommunications technology development. Table 3 is a summary of the Utilities Spectrum Assessment Taskforce (USAT) report spectrum prediction, which was included as an attachment to American Water Works Association's comments and derived from projections of future wireless applications and growth.

xx

Table 3
USAT Final Report Spectrum Requirements

Year	2000	2004	2010
Additional Bandwidth Required	1.0 MHz	1.9 MHz	6.3 MHz

Another commenter, Data Flow Systems, specifically recommends that the 216-220 MHz band be dedicated to water utility telemetry uses nationwide.

The Railroad Industry

The Association of American Railroads suggests that the 700 MHz "guard band," recently auctioned by the FCC, be considered as a source of additional spectrum and that it be divided into geographic sectors, each with a separate band manager. The Association of American Railroads notes that one impediment to this suggestion is that the 700 MHz band is currently occupied by broadcast television stations.

The Association of American Railroads also suggests the 1.4 GHz band as a source for the proposed Land Mobile Communications Service for itself and other members of the Land Mobile Communications Council. The Association of American Railroads and other members of the Land Mobile Communications Council have previously asked the Federal Communications Commission for spectrum in the 1.4 GHz band (specifically, the 1390-1395 MHz/1427-1429 MHz/1432-1435 MHz bands), and to limit auctions in the 1392-1395 MHz and 1432-1435 MHz bands to band managers.

SUMMARY/CONCLUSIONS

In its investigation into the use of spectrum by these industries, NTIA recognizes the vital roles the railroad, water, and energy industries play in the Nation's critical infrastructure. The events of September 11, 2001, have underlined the importance of these industries and the role they play not only in our daily lives, but in times of disaster response and recovery. When the World Trade Center collapsed, utilities needed to be shut off or restored. It was important for sufficient water pressure to be continuously available for firefighting, and when the airlines were grounded, people and commerce relied more on the railroad industry for transportation.

Since this report is based predominantly on comments received from the industry and public, and information from federal agencies with oversight or regulatory authority over these industries, NTIA is unable to validate specific requirements and issues highlighted herein, such as exclusivity and congestion. However, NTIA suggests some of these issues may be addressed or mitigated with the use of advanced communications technology or newly allocated frequency bands, such as the 700 MHz guard bands.

NTIA believes the significance of these industries and the urgency of these issues may have changed as a result of the September 11th events. Therefore, it is of utmost importance that the Federal Communications Commission revisit these critical issues in order to accommodate the increasing role these industries play in maintaining quality of life.

Attachment B

UTC
UNITED TELECOM COUNCIL

U.S. Emergency Wireless Network – A Responder Build-out Proposal

All parties concerned with homeland security agree: one of the primary needs in any emergency situation is reliable communications, interoperable among all responding entities. Due to its long-standing regulatory framework and division of jurisdiction over radio-frequency (RF) spectrum, the United States currently has no such capability. Whether manmade or natural, emergencies leave traditional public safety agencies, utilities and other responding critical infrastructure entities, and relevant federal agencies unable to communicate effectively, both between and among themselves, at the time it is needed most. This serious gap in capability must be addressed.

The United Telecom Council (UTC), the voice of critical infrastructure (CI) telecommunications since 1948, is among the many parties seeking a solution to this difficult problem. In addition, UTC is increasingly concerned that ***critical infrastructure industries have no spectrum dedicated for their use on any frequency band***, as noted in the 2002 National Telecommunications and Information Administration (Commerce) study of current and future spectrum use by the energy, water and railroad industries. CI wireless systems are operational currently in bands shared with many incompatible uses; mission-critical telemetry and SCADA systems are often found on bands where they have only secondary status and may be required to cease operations, and all CI communications face increasing congestion and harmful interference. Moreover, different utilities do not use the same spectrum for the same operations because of varying frequency availability across the Nation, thus hampering cooperative efforts in times of emergency.

Proposal

UTC proposes to solve all these problems simultaneously, by a means we believe would: 1) cost less; 2) use spectrum more efficiently; and 3) meet the needs of emergency responders more closely than other proposals. Utilities and other CI entities traditionally work closely with traditional public safety agencies; they respond to the same emergencies, but utilities generally have more emergency-reliable wireless communications due to construction of facilities at or near electrical substations. In fact, CI entities increasingly help to build traditional public safety radio systems, and/or share frequencies with public safety agencies. ***Congress and the FCC recognized the close working relationships among these entities when they re-classified utilities, pipelines and other CI entities as "public safety radio services" along with more traditional public safety organizations such as police and fire departments.***

To promote faster, more reliable and interoperable emergency response, as well as to meet the urgent communications needs of CI entities for the next decade or more,

UTC proposes an innovative, but not unfamiliar to these entities, use of scarce RF spectrum:

- To meet everyday needs for reliable wireless voice and data communications, UTC recommends a small CI nationwide spectrum allocation of 6-10 MHz in a frequency band below 1 GHz;

- With partial funding, CI entities would construct infrastructure nationwide, implementing an integrated voice and data technology platform providing an interoperable communications system. Utilities and other CI entities would migrate to this system over time. Additional, fully operational equipment would be kept on hand by local CI entities using the system. In emergency situations, all traditional public safety, federal and other agencies would have immediate access to this equipment. A system of priority access to frequencies would also be available for emergency use to ensure reliable access to emergency responders.

- An alternative interoperable system would consist of a "network of networks," in which CI entities, traditional public safety agencies and other emergency responders would designate existing frequencies to an interoperable network during emergencies, all entities retaining control over their existing networks. With nationwide designated spectrum, CI entities could build and maintain the umbrella technology making this system possible.

Either method of interoperability would ensure that scarce spectrum resources are used efficiently, while providing the widespread access to joint communications needed urgently to meet U.S. emergency response needs. Given the long-time expertise in infrastructure build-out by CI entities, coupled with their deep understanding of emergency communications needs, UTC believes this proposal would provide for the type of nationwide emergency communications system most needed, built by the best-qualified entities.

UTC is anxious to discuss its efforts in this direction and means by which this proposal may be implemented, and looks forward to working with your office to develop it further. Please do not hesitate to contact UTC Vice President and General Counsel Jill Lyon at 202-833-6808 or jill.lyon@utc.org.

Attachment C

800 MHz USER COALITION
BALANCED APPROACH

STATEMENT OF INTEREST

This coalition of parties believes that there are better alternatives to solving the Public Safety interference problems in the 800 MHz band than the "Consensus Plan" filed on December 24, 2002. The participants in this coalition include entities from the electric, gas and water utilities, business and industrial users, non-Nextel EA General Category Auction licensees, incumbent SMR licensees operating on General Category channels, equipment manufacturers, and CMRS licensees. This group represents an even broader group of affected parties than the so-called "Consensus Parties," and it is representative of the licensees that would suffer harm from the implementation of the "Consensus Parties'" Plan.

The premise of the 800 MHz User Coalition approach is that something must be done in the near term to address interference that is more immediate, more effective, less disruptive and less costly than the "Consensus Plan." Given that, according to the APCO database, only 1% of Public Safety systems reported interference incidents last year, the common sense approach is to focus first on mitigating those problems and preventing future interference, instead of jumping to a "solution" that would disrupt 100% of Public Safety systems, not to mention all other licensees in the 800 MHz band. The attached Statement of Principles and detailed action plan describe a concrete alternative to the "Consensus Plan" that relies on enhanced mitigation techniques that build upon, but go beyond, existing "best practices." The proposed approach recognizes technical advances described in recent filings by equipment manufacturers that further improve the potential for a mitigation-oriented solution.

The 800 MHz User Coalition Balanced Approach offers a comprehensive alternative plan to resolve interference in the 800 MHz band that, at the same time, promotes spectrum efficiency and maximizes the future utility of the frequency band, without the inefficient, heavy-handed, command and control aspects of the "Consensus Plan."

800 MHz USER COALITION
BALANCED APPROACH

Coalition Members

Access Spectrum
Alameda Power & Telecom
ALLTEL Communications
Ameren Corporation
American Electric Power (AEP)
American Gas Association (AGA)
American Public Power Association (APPA)
Applied Technology Group, Inc.
AT&T Wireless Services, Inc.
Avoyelles Parish Office of Emergency Preparedness, LA
Avoyelles 9.1.1., LA
City of Baltimore, MD
City of Blevins, AR
Botetourt County, VA
Caldwell Parish Sheriff Office, LA
CLC Repeater Co.
Cellular Telecommunications & Internet Association (CTIA)
Cherry Todd Electric Cooperative
Cinergy Corporation
Cingular Wireless
Cleveland County, AR
City of Colorado Springs, CO
Consumers Energy Co.
Dominion
Duke Energy
Edison Electric Institute (EEI)
Entergy Corp./Entergy Services
Exelon Corporation
Franklin Parish Sheriff Office, LA
Fresno Mobile Radio, Inc.
Holy Cross Electric Association
City of Horn Lake, MS
Kansas City Power & Light
City of Lake Charles, LA
County of Little River, AR
Madison Parish Sheriff's Department, LA
Maricopa County Information Technology, AZ
Mobile Relay Associates
Monroe Police Department, LA
National Rural Electrical Cooperative Association (NRECA)
Palomar Communications
Peak Relay, Inc.
Pinnacle West Capital Corp.
Preferred Communication Systems
City of Rison, AR
City of Sheridan, AR
Small Business in Telecommunications
Southern Company/SouthernLINC
Supreme Radio Communications, Inc.
Tensas Basin Levee District, LA
City of Tallulah, LA
U.S. Cellular Corp.
United Telecom Council (UTC)
Verizon Wireless
Western Wireless
Winnsboro Police Department, LA
Xcel Energy

STATEMENT OF PRINCIPLES FOR ADDRESSING 800 MHZ INTERFERENCE

Step 1: Solve interference through mandated mitigation using enhanced best practices.

Immediate steps to improve mitigation techniques include:

- Licensees in the 800 MHz band should take pro-active steps to ensure that potential interference situations are identified and avoided, to the extent possible. Procedures to implement this approach are detailed in Attachment A.I.

- FCC should clarify and codify a policy that entities creating interference to licensees in the 806-824/851-869 MHz band should be responsible for mitigating the reported interference within 60 days of being contacted by the affected licensee, at the cost of the interfering licensee. This policy would apply even if the interfering licensee/equipment is operating consistent with current FCC rules while causing the interference. Procedures to implement this approach are detailed in Attachment A.II.

- Non-Public Safety 800 MHz licensees should provide engineering expertise and assistance to Public Safety. All incumbent licensees in the 800 MHz band should be full partners with other stakeholders in identifying incidents of interference and evaluating and implementing solutions. Interference may be caused by transmitter or receiver equipment.

- The APCO "Best Practices" recommendations should be enhanced and incorporated into the FCC's Rules, and all licensees operating in the 800 MHz band, including Public Safety and private licensees, should be required to abide by these rules to minimize interference.

- The FCC should adopt modified technical rules to prevent future interference, incorporating many of the technical advances identified in filings by equipment manufacturers. (See Attachment B for further detail on these technical measures).

- The FCC should allow more flexibility in current user pool eligibility restrictions to allow private market agreements such as frequency swaps as a means of reducing and preventing interference.

- Mitigation techniques that address interference to incumbent systems should not come at the expense of non-interfering licensees, particularly Critical Infrastructure licensees. The function of Critical Infrastructure licensees is particularly vital in today's atmosphere of heightened homeland security, and they should not be accorded secondary treatment.

Step 2: Initiate a review to assess progress and effects of Step 1 mitigation measures, and to evaluate longer-term measures that might prove necessary *if and only if* these mitigation techniques and rule changes do not adequately resolve interference.

- The review should be coordinated by an independent agent, working with a steering committee including all affected stakeholders (a focused industry-Public Safety working group), and should build on /incorporate existing efforts.

- The review should be initiated immediately, and focus first on monitoring and evaluating the track record of the enhanced best practices approach in resolving interference concerns. It should, in addition, examine the nature and extent of any remaining interference problems that are not adequately resolved by the measures in Step 1, and develop concrete recommendations to fix them. The review should be comprehensive, and include recommendations on solutions to avoid specific problems (technical mitigation approaches beyond " Enhanced Best Practices") as well as broader solutions if interference is not sufficiently mitigated.

- The review would involve the affected 800 MHz stakeholders contributing engineering expertise and assistance to Public Safety.

- The review should include recommendations on funding of any appropriate remediation measures. Remediation measures should be limited if initial mitigation techniques are as successful as anticipated.

ATTACHMENT A

PROPOSED PROCEDURES FOR INTERFERENCE MITIGATION IN 806-824/851-869 MHz BAND

I. Procedures to Identify and Avoid Incidences of Interference in the 806-824/851-869 MHz band.

- Any licensee wishing to install a new antenna in the 851-869 MHz band at height of less than 30 meters AGL ("low-site transmitters") shall notify co- and adjacent channel licensees within the protected service contour (via filing at the FCC in ULS or an alternative database) and appropriate frequency coordinators 30 days in advance of the installation of the site providing the following information:
  - Licensee Name
  - Point of Contact-Information: Name, address, telephone number, and e mail address for technical person knowledgeable about site.
  - Site Coordinates
  - Certification: The licensee shall certify that it has performed an engineering analysis pursuant to generally accepted industry practices and has determined that its operation of that site is not predicted to cause co-channel or adjacent channel interference to other licensees in the 806-824/851-869 MHz Band within service areas that overlap a 5,000 foot radius around its transmitter site.

II. Procedures to Address Identified Interference Problems

- A 806-824/851-869 MHz licensee receiving interference will immediately notify any suspected interfering low-site system operator or operators of the problem by:
  - Posting the interference complaint to an e-mail address to be established and operated jointly by the licensees of low-site systems in this band.
- The Complainant shall identify:
  - Specific geographic location where interference is occurring,
  - FCC license information for the Complainant's system,

- Point of Contact Information for the Complainant's system.

- All licensees receiving notice of complaint via the website shall respond within two business days and shall confirm whether they have systems operating within 5,000 feet of alleged site of interference.

- On-site analysis: The Complainant shall contact the potentially responsible contributors to the interference to arrange for an on-site analysis to take place within five business days (or later at the discretion of the complaining entity). The Complainant and all potential contributors shall support the analysis effort.

- Mitigation steps:

  - When the analysis shows that one or more of the suspected interfering operators are actually interfering with the system in question, the contributors to the interference shall correct the interference per industry-standard mitigation techniques. The resolution of the interference shall be documented and copies provided to each contributor and the complaining licensee.

  - If mitigation of interference at a site requires that contributors make changes that can be easily reversed or substantially modified (e.g., changing of transmitter frequencies to avoid intermodulation ("IM") product formation on a particular frequency, or a reduction in on-street power), then the contributor making the change shall continue to coordinate both with the other contributors and the complaining entity before making further changes to the site.

  - If the analysis finds that interference is caused by something other than the equipment belonging to potential contributor system operators (e.g., a bi-directional amplifier ("BDA") installed by a third party, or "receiver-generated" IM interference), the owner of the equipment shall be responsible for mitigating the interference. The participants in the on-site analysis shall be responsible for notifying the equipment owner of this finding.

- The Complainant shall have a duty to cooperate in the implementation of the most cost-effective solution.

- If an agreement between the parties is not reached within 60 calendar days after receipt of the written notice of interference, any affected party may submit the matter to the FCC for resolution. The FCC shall order appropriate steps to resolve interference in the most efficient manner, including by such means as specifying the transmitter power, antenna

height or frequency, or requiring other changes in operation or equipment to correct the problem.

ATTACHMENT B

TECHNICAL RULE MODIFICATIONS

- The following technical rules, in addition to the requirement, described above, that interfering licensees correct their interference, should be adopted as part of the effort to resolve interference through improved mitigation techniques. The FCC should:

  - Require licensees in the 800 MHz band to comply with the procedures outlined in Attachment A, ie:
    - Notify co- and adjacent channel licensees within the protected service contour (via filing at the FCC in ULS) and appropriate authorized 800/900 MHz frequency coordinators 30 days in advance of initiating transmissions from a new "low site transmitter".
    - Respond to interference complaints within two business days and resolve interference expeditiously through industry-standard mitigation techniques.

  - Require Licensees in the 806-824/851-869 MHz band to calculate percentage degradation for land mobile systems by using the TSB-88 algorithm. While the TSB-88 algorithm was developed to address interference issues associated with land mobile refarming, the methodology could be used at 800 MHz to evaluate co-channel and adjacent-channel systems. Implementing the use of TSB-88 could address potential interference from digital operations on channels directly adjacent to proposed facilities. Frequency coordinators in the band must decide on mileage criteria that would necessitate evaluation of adjacent-channel facilities. Absent a current recommendation from 800 MHz frequency coordinators, a 70-mile radius is proposed.

  - Codify or amend the regulations as necessary to allow for external filtering and other added equipment to be used to reduce or eliminate interference.

  - Adopt the "APCO Best Practices" recommendation to require that user receiver equipment in the 806-824/851-869 MHz band provide a minimum 75 dB intermodulation specification.

  - Require licensees of "low-site" systems in the 806-824/851-869 MHz band to limit the ERP of base stations with an antenna height of 30 meters or less above ground to 100 watts/25 kHz channel.

- "Low sites" may be defined similarly to the "cellular" definition offered by the Consensus Plan, *i.e.*: sites: 1) that are included within a system with five or more overlapping sites with handoff capability; 2) with twenty or more operating frequencies; and 3) with antennas at a height of up to 30 meters above ground.

- All base station operations in the 806-824/851-869 MHz band should be subject to a single rules section concerning emission restrictions. The requirements of 47 CFR 90.543 – Emissions limitations, including the ACCP Tables addressing adjacent channel and OOBE levels (excepting subparagraph (e)) for 12.5 kHz or wider operations, should, at an appropriate future date, replace the current rules sections dealing with emission masks for various portions of the band, modified as necessary to accommodate bandwidths currently not included in the ACCP Tables. To implement this standard, 47 CFR 90.691- Emission mask for EA-based systems, and 47 CFR 90.669 - Emission limits for MTA licensees, should be modified to conform to the above standard. This, coupled with ERP restrictions, would significantly reduce the possibility of interference between and to noise-limited systems operating in the vicinity of low sites.

    - The combination of low-site ERP restrictions, the adoption of the ACCP attenuation requirements of 47 CFR 90.543, and the use of TSB-88 for adjacent channel separation, coupled with the removal of eligibility barriers to permit "frequency swapping" and other measures to allow operators to reduce or eliminate interference, will eliminate the need for the creation of a "guard band" as described in the PWC Plan, Appendix F, Section 4.1.2. As has been stated previously, the "sliding scale" of protection for frequencies in the proposed guard band might not significantly impact low-power campus systems, but would have a devastating impact on wide-area users currently licensed and operating in the proposed guard band, as well as the many non-public safety incumbent systems that would be required to retune to the 859-861 MHz portion of the band under the PWC proposal.

- Establish adjacent channel spacing standards for use in coordinating non-EA channels, to facilitate the ability of frequency coordinators to review the spacing of channels adjacent to the frequency under consideration, as well as the co-channel spacing, during the coordination process.

- Any interference that should remain after the implementation of the above measures could be resolved through "Enhanced Best Practices" measures such as careful design or redesign of antenna systems, filters, and other non-transmitter-specific remedies. Under this proposal, manufacturers would be able to produce equipment usable across the entire band, maintaining economies of scale, encouraging manufacturer involvement and innovation and benefiting the 800 MHz market in general.

    - Motorola, for example, is testing the use of switchable attenuators in portable receivers to reduce the strength of signals entering the receiver in strong signal areas that would otherwise result in non-linear operation of the low noise amplifier and mixer, creating intermodulation interference.[5]

    - Motorola is also testing software-controlled tunable filters in their portable receivers that retune the filter based on received signal strength, allowing the portable to operate correctly in the presence of strong CMRS signals. Further, Motorola has written that "All of the deployed dual-band XTS 2500 and XTS 5000 model radios (which began shipping in 4th quarter 2001) are physically capable of implementing this solution, but will require additional software."[6]

[5] *See* Letter to Edmond Thomas, Chief, OET, from Steve Sharkey, Motorola, May 6, 2003.
[6] *Id.*

FIRST RESPONDER INTEROPERABILITY: CAN YOU HEAR ME NOW? (FEDERAL PERSPECTIVES)

THURSDAY, NOVEMBER 6, 2003

HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON NATIONAL SECURITY, EMERGING THREATS AND INTERNATIONAL RELATIONS, JOINT WITH THE SUBCOMMITTEE ON TECHNOLOGY, INFORMATION POLICY, INTERGOVERNMENTAL RELATIONS AND THE CENSUS, COMMITTEE ON GOVERNMENT REFORM,

Washington, DC.

The subcommittees met, pursuant to notice, at 11:45 a.m., in room 2154, Rayburn House Office Building, Hon. Christopher Shays (chairman of the Subcommittee on National Security, Emerging Threats and International Relations) presiding.

Present: Representatives Putnam, Duncan, Janklow, Murphy, Schrock, Shays, Clay, Maloney, Ruppersberger, Sanchez, and Tierney.

Also present: Representatives Harman and Weldon.

Staff present: Lawrence Halloran, staff director and counsel; and Robert A. Briggs, clerk, Subcommittee on National Security, Emerging Threats and International Relations; Bob Dix, staff director; Ursula Wojciechowski, clerk; and John Hambel, counsel, Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census; Grace Washbourne, professional staff member; David McMillen, minority professional staff member; Jean Gosa, minority assistant clerk; and Casey Welch and Jamie Harper, minority legislative assistants, Committee on Government Reform.

Mr. SHAYS. A quorum being present, the Subcommittees on National Security, Emerging Threats and International Relations, and Technology, Information Policy, Intergovernmental Relations and the Census hearing entitled "First Responders Interoperability: Can You Hear Me Now? (Federal Perspectives)" is called to order.

This hearing brings before us key Federal officials responsible for the policies, technologies, standards, and frequency allocations needed to advance interoperability. We appreciate their being here and look forward to their testimony.

I will put on the record my statement that opened the previous hearing.

[The prepared statement of Hon. Christopher Shays follows:]

TOM DAVIS, VIRGINIA,
CHAIRMAN
DAN BURTON, INDIANA
CHRISTOPHER SHAYS, CONNECTICUT
ILEANA ROS-LEHTINEN, FLORIDA
JOHN M. MCHUGH, NEW YORK
JOHN L. MICA, FLORIDA
MARK E. SOUDER, INDIANA
STEVEN C. LATOURETTE, OHIO
DOUG OSE, CALIFORNIA
RON LEWIS, KENTUCKY
JO ANN DAVIS, VIRGINIA
TODD RUSSELL PLATTS, PENNSYLVANIA
CHRIS CANNON, UTAH
ADAM H. PUTNAM, FLORIDA
EDWARD L. SCHROCK, VIRGINIA
JOHN J. DUNCAN, JR., TENNESSEE
JOHN SULLIVAN, OKLAHOMA
NATHAN DEAL, GEORGIA
CANDICE MILLER, MICHIGAN
TIM MURPHY, PENNSYLVANIA
MICHAEL R. TURNER, OHIO
JOHN R. CARTER, TEXAS
WILLIAM J. JANKLOW, SOUTH DAKOTA
MARSHA BLACKBURN, TENNESSEE

ONE HUNDRED EIGHTH CONGRESS

Congress of the United States
House of Representatives
COMMITTEE ON GOVERNMENT REFORM
2157 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515–6143

Majority (202) 225-5074
Facsimile (202) 225-3974
Minority (202) 225-5051
TTY (202) 225-6852

www.house.gov/reform

HENRY A. WAXMAN, CALIFORNIA,
RANKING MINORITY MEMBER
TOM LANTOS, CALIFORNIA
MAJOR R. OWENS, NEW YORK
EDOLPHUS TOWNS, NEW YORK
PAUL E. KANJORSKI, PENNSYLVANIA
CAROLYN B. MALONEY, NEW YORK
ELIJAH E. CUMMINGS, MARYLAND
DENNIS J. KUCINICH, OHIO
DANNY K. DAVIS, ILLINOIS
JOHN F. TIERNEY, MASSACHUSETTS
WM. LACY CLAY, MISSOURI
DIANE E. WATSON, CALIFORNIA
STEPHEN F. LYNCH, MASSACHUSETTS
CHRIS VAN HOLLEN, MARYLAND
LINDA T. SANCHEZ, CALIFORNIA
C.A. DUTCH RUPPERSBERGER, MARYLAND
ELEANOR HOLMES NORTON, DISTRICT OF COLUMBIA
JIM COOPER, TENNESSEE
CHRIS BELL, TEXAS

BERNARD SANDERS, VERMONT,
INDEPENDENT

SUBCOMMITTEE ON NATIONAL SECURITY, EMERGING THREATS,
AND INTERNATIONAL RELATIONS
Christopher Shays, Connecticut
Chairman
Room B-372 Rayburn Building
Washington, D.C. 20515
Tel: 202 225-2548
Fax: 202 225-2382
E-mail: hr.groc@mail.house.gov

Statement of Rep. Christopher Shays
November 6, 2003

More than a year before September 11th 2001, the National Security Subcommittee heard testimony from first responders who had just participated in a tabletop exercise of emergency responses to a chemical attack. Among the first casualties in that scenario were internal and external communications between federal, state and local officials.

On September 15th of this year, we observed a similar exercise, with similar results. Fully two years after what many saw as a wake up call from hell, too many first responders still can't hear the alarm. Despite significant expenditures and some progress, public safety and emergency response communications remain a high tech Tower of Babel splintered by different electromagnetic, political and fiscal languages.

What stands in the way of first responder interoperability? Major impediments appear to be less a question of hardware or software than wetware – the human circuitry that must power enhanced connectivity. Linking more than 44,000 state and local agencies and over 100 federal programs and offices for effective emergency response challenges entrenched cultures of intergovernmental mistrust. Interoperability threatens old ways of doing business while pitting public uses of limited radio frequency spectrum against new commercial wireless applications.

Efforts like the Wireless Public Safety Interoperable Communications Program, called "SAFECOM," in the Department of Homeland Security (DHS) face daunting near and long-term obstacles: old and incompatible equipment not yet due to be replaced, misaligned planning and funding cycles, and narrow, fragmented public safety spectrum bands crowded between bursting commercial uses. In Connecticut's 4th District, which I represent, interference on public safety bands is a serious and growing problem.

Central to the apparent intractability of all these issues is the lack of technology and performance standards for interoperability. Unless state, local and federal public safety and emergency response agencies know exactly when, how, with whom and on what frequencies they are supposed be able to communicate, there is little chance randomly implemented, vendor driven technical upgrades will produce much more than accidental interoperability.

Real time communication capability in the face of the terrorist threat is a national security imperative. When the next attack comes, lives will be lost as a result of the technical gaps, jurisdictional stovepipes and jumbled spectrum allocations still impeding effective public safety voice communications and data sharing. We need to know how, and when, SAFECOM and other federal efforts will channel the current technological and political cacophony into the seamless network that will carry our most potent weapons against terror – accurate, timely information.

I want to thank Technology Subcommittee Chairman Adam Putnam and his staff for convening this joint hearing with us today. It's a small, but fitting, example of breaching jurisdictional barriers in the cause of greater interoperability.

We thank all our witnesses for their time and for the expertise they bring to this important discussion. Welcome.

Mr. SHAYS. I will recognize any Member who would like to make a statement for this hearing before we recognize our panel.

Is there anyone who would like to make a statement? I recognize the chairman of the subcommittee.

Mr. PUTNAM. Just very briefly, Mr. Chairman.

I appreciate your leadership on this, and I have to tell you how very disappointed I am in the difficulty that we had pulling together the witnesses from the Federal Government. The first panel, the first hearing, and it was a hearing, not a panel because of the uprising by the administration witnesses, gave us a pretty clear outline of the cultural challenges that we face in bringing interoperability and cooperation to this problem.

Our two subcommittees managed to work through the jurisdictional issues, and the Federal Government can't seem to figure out how to do that. And when agencies threaten to refuse to come to a congressional hearing because they are not going to get to speak first, it is a little bit embarrassing. It is very embarrassing. And I am certain that a lot of these things get wrapped up in staff conflicts and things like that, but if you are a member of the Rotary Club or the Kiwanis Club or, when you are back, it is your homeowner's association, I think that if you raise the issue with your neighbors that we thought about not going to the congressional hearing because they weren't going to put the administration first, we were going to hear from the State and local officials and the industry beforehand, I think that they would have a hard time seeing it from your perspective.

Frankly, I am glad that we weren't made aware of this until the last minute, because if it had been up to me, we would have just had empty chairs, and with place cards where the agencies might have been. But it is perfectly illustrative of the problem about working together and bringing interoperability and bringing coordination to this very, very serious issue.

And so I just wanted to begin, Mr. Chairman, by thanking you for your leadership and thanking the administration representatives for finding a suitable format for which they would share their insight into this issue.

[The prepared statement of Hon. Adam H. Putnam follows:]

TOM DAVIS, VIRGINIA
CHAIRMAN
DAN BURTON, INDIANA
CHRISTOPHER SHAYS, CONNECTICUT
ILEANA ROS-LEHTINEN, FLORIDA
JOHN M. MCHUGH, NEW YORK
JOHN L. MICA, FLORIDA
MARK E. SOUDER, INDIANA
STEVEN C. LATOURETTE, OHIO
DOUG OSE, CALIFORNIA
RON LEWIS, KENTUCKY
JO ANN DAVIS, VIRGINIA
TODD RUSSELL PLATTS, PENNSYLVANIA
CHRIS CANNON, UTAH
ADAM H. PUTNAM, FLORIDA
EDWARD L. SCHROCK, VIRGINIA
JOHN J. DUNCAN, JR., TENNESSEE
JOHN SULLIVAN, OKLAHOMA
NATHAN DEAL, GEORGIA
CANDICE MILLER, MICHIGAN
TIM MURPHY, PENNSYLVANIA
MICHAEL R. TURNER, OHIO
JOHN R. CARTER, TEXAS
WILLIAM J. JANKLOW, SOUTH DAKOTA
MARSHA BLACKBURN, TENNESSEE

ONE HUNDRED EIGHTH CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON GOVERNMENT REFORM

2157 RAYBURN HOUSE OFFICE BUILDING

WASHINGTON, DC 20515–6143

MAJORITY (202) 225-5074
FACSIMILE (202) 225-3974
MINORITY (202) 225-5051
TTY (202) 225-6852

www.house.gov/reform

HENRY A. WAXMAN, CALIFORNIA
RANKING MINORITY MEMBER

TOM LANTOS, CALIFORNIA
MAJOR R. OWENS, NEW YORK
EDOLPHUS TOWNS, NEW YORK
PAUL E. KANJORSKI, PENNSYLVANIA
CAROLYN B. MALONEY, NEW YORK
ELIJAH E. CUMMINGS, MARYLAND
DENNIS J. KUCINICH, OHIO
DANNY K. DAVIS, ILLINOIS
JOHN F. TIERNEY, MASSACHUSETTS
WM. LACY CLAY, MISSOURI
DIANE E. WATSON, CALIFORNIA
STEPHEN F. LYNCH, MASSACHUSETTS
CHRIS VAN HOLLEN, MARYLAND
LINDA T. SANCHEZ, CALIFORNIA
C.A. DUTCH RUPPERSBERGER
MARYLAND
ELEANOR HOLMES NORTON,
DISTRICT OF COLUMBIA
JIM COOPER, TENNESSEE
CHRIS BELL, TEXAS

BERNARD SANDERS, VERMONT,
INDEPENDENT

SUBCOMMITTEE ON TECHNOLOGY, INFORMATION POLICY, INTERGOVERNMENTAL RELATIONS AND THE CENSUS
Congressman Adam Putnam, Chairman

OVERSIGHT HEARING
STATEMENT BY ADAM PUTNAM, CHAIRMAN

Hearing topic: *"First Responder Interoperability: Can You Hear Me Now?"*

Thursday, November 6, 2003
10:00 a.m.
Room 2154 Rayburn House Office Building

OPENING STATEMENT

The Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census has held a number of comprehensive oversight hearings this year on our federal E-Government initiatives, from E-Payroll and E-Recruitment to E-Records and Federal IT Consolidation. Our Subcommittee has also held several E-Government oversight hearings to address those specific initiatives whose success is clearly dependent on extensive coordination and cooperation with our state and local governments, including the E-Grants initiative and GeoSpatial One-Stop.

During all of these hearings, the Subcommittee uncovered billions of dollars in annual savings that can be achieves from E-Government, and focused on the vast opportunities we have to provide more efficient services for our citizens. I am pleased to report that despite some funding challenges, most of the E-Government agenda is on-target and making progress as each day passes.

Conversely, today's hearing on SAFECOM raises some anxiety and concern in terms of progress and our ability to succeed. Let's be frank: the undeniable need to succeed with this initiative makes SAFECOM perhaps the most important of all the initiatives occurring across our federal government. In fact, SAFECOM is not just about improving government, but rather, SAFECOM is about the mission and role of our federal government.

My concern is grounded by the fact that while we have more than enough folks providing suggestions on how to spend our limited Homeland Security grant money, no one seems very interested in taking full responsibility for the performance and actual results associated with this spending nor will anyone be held responsible if we have – heaven help us -- another tragedy . . . but this time, perhaps a tragedy with expensive, new, incompatible, non-working equipment instead of the old, incompatible, non-working, equipment.

Without stakeholder agreement and results, I think the only thing "SAFE" about "SAFECOM" is that we can "SAFELY" predict "the mother of all" finger pointing. That is why this hearing is so critical. We must determine the role of each stakeholder and create an atmosphere of accountability and responsibility for performance and results. We cannot achieve "half-a-loaf" on this initiative, we cannot claim small wins, we must succeed with SAFECOM in its entirety.

So what is the current atmosphere for preparing and prioritizing our spending for first responders? First, our Homeland Security grants have very few strings attached that require interoperability of equipment across regions and states or with the federal government. Next, our SAFECOM managers have absolutely no authority to require the FCC to reorganize or designate additional bandwidth for emergency needs. Therefore, we may well be spending billions of dollars on shiny new equipment that will then not work properly once the power switch is turned on. Next, we must not forget our state and local elected officials, who are doing their best to secure any money they can get for their jurisdictions, notwithstanding a lack of bandwidth or an inability to become interoperable with adjacent jurisdictions or older technology.

We must also not forget Congress' role in both creating and solving this chaos. Given Congressional oversight responsibility, Congress legislatively joins the FCC in allocating the limited and fragmented radio spectrum between commercial communication entities, television broadcasting companies, and our state and local governments. And as we appropriate funds, every member of Congress is seeking his fair share of grant monies for his district or state, regardless of any communications standards or regulations created inside the Beltway by the good people managing the SAFECOM initiative.

In addition to the challenges and pressures facing each stakeholder to perform, the SAFECOM initiative has the added pressure of having to produce concrete results with little time to coordinate standards. As tax money builds-up in accounts intended to purchase equipment once standards and frequency questions are resolved, enormous pressure builds to push that cash out the door as quickly as possible . . . and perhaps deal with the details later.

Unfortunately, the devil is in the details when it comes to interoperability. Adding to that challenge is the interagency role SAFECOM plays to develop interoperability standards and integrate our own federal agencies. SAFECOM's challenges are enormous.

From the FCC perspective, we will no doubt hear today of the finer details related to separate frequency bands used by first responders and how they cannot be bridged by systems equipment. We will also hear particulars about the 700-megahertz band versus the 800-megahertz band versus the 50-megahertz band. My interest, however, will be focused on the process and a timeline in which the FCC will make decisions on spectrum allocation or reallocation so that all stakeholders – including equipment vendors – will be ready to coordinate interoperable solutions. It is clear that we cannot move forward or expect positive complete results without some decisions being made by those in positions of authority at the FCC and perhaps OMB. If not, we will have to solve these issues right here on Capitol Hill . . . which is not the preferred solution by any means.

I am very pleased we have nearly every stakeholder group represented here today to discuss their challenges, their roles, their responsibilities, and even what business-as-usual sacrifices they plan to make in order to generate real results. While I am not certain we will have all the answers today, I am confident we have an opportunity to make some progress today with our E-Gov leadership and FCC leadership testifying next to each other before Congress for the first time ever on this issue.

Before yielding to Chairman Shays, I would also like to extend a special welcome to Marilyn Ward, who happens to be the Manager of Public Safety Communications for Orange County, Florida. We have a bit more experience in Florida than we perhaps would like responding to emergencies, but we have learned a lot that I believe will be useful towards improving our country's first responder communications. Ms. Ward's performance and know-how have, in fact, earned her the Chairmanship of the National Public Safety Telecommunications Council, which she represents here today.

###

Mr. SHAYS. I thank the gentleman.

Anyone else who has a statement?

I will say for the record that our witnesses were good enough to be at the previous hearing that we had, and I thank them for that. So you will be able to make comment on what was said.

But I do share your concerns, Mr. Putnam.

We will also put on the record Mr. Clay's opening statement and I think the opening statements that all the members had for this hearing as well.

At this time, I will just recognize those who are participating in this hearing: The Honorable Karen S. Evans, E-Government IT Director, U.S. Office of Management and Budget; Mr. David Boyd, Program Manager, SAFECOM, Wireless Public Safety Interoperable Communications Program, U.S. Department of Homeland Security; Dr. John S. Morgan, Assistant Director for Science and Technology, National Institute of Justice; and John Muleta, Chief, Wireless Bureau, Federal Communications Commission; and, finally, Edmond Thomas, Chief, Office of Engineering and Technology, Federal Communications Commission as well.

And at this time I would invite you to stand; we will swear you in, as we swear all our witnesses in. If there is anyone else you think who has accompanied you that may need to respond to an answer, I would prefer they stand up now, even if they turn out not to be needed; at least this way we won't have to swear anyone else in. Is there anyone else that you would like sworn in? OK.

[Witnesses sworn.]

Mr. SHAYS. Note for the record our witnesses have responded in the affirmative.

And we will go as I called you.

Excuse me, let me take care of the UCs. I ask unanimous consent that all members of the subcommittee be permitted to place an opening statement in the record and the record remain open for 3 days for that purpose. Without objection, so ordered.

I ask further unanimous consent that all witnesses be permitted to include their written statement in the record. Without objection, so ordered.

And, again, we are going to put the opening statements that Members made at the previous hearing in as part of this hearing's record, and at this time we will just basically go right down the table there.

Ms. Evans, you have the floor. You are going to need to put that mic much closer to you, as I was told to do. Excuse me. I have to practice what I preach.

STATEMENTS OF KAREN S. EVANS, ADMINISTRATOR OF E-GOVERNMENT AND INFORMATION TECHNOLOGY, U.S. OFFICE OF MANAGEMENT AND BUDGET; DR. DAVID BOYD, PROGRAM MANAGER, SAFECOM, WIRELESS PUBLIC SAFETY INTEROPERABLE COMMUNICATIONS PROGRAM, U.S. DEPARTMENT OF HOMELAND SECURITY; JOHN MORGAN, ASSISTANT DIRECTOR, SCIENCE AND TECHNOLOGY, NATIONAL INSTITUTE OF JUSTICE, ADVANCED GENERATION INTEROPERABILITY LAW ENFORCEMENT [AGILE]; JOHN MULETA, CHIEF, WIRELESS BUREAU, FEDERAL COMMUNICATIONS COMMISSION; AND EDMOND THOMAS, CHIEF, OFFICE OF ENGINEERING AND TECHNOLOGY, FEDERAL COMMUNICATIONS COMMISSION

Ms. EVANS. Good morning, Chairman Shays, Chairman Putnam, and members of the committee. Thank you for inviting me to speak about communication challenges facing the first responder community. My remarks will focus on the administration's strategy and progress to date in working with State, local, and tribal governments and organizations to address these challenges to achieve interoperability.

As you know, in the fall of 2001, OMB's E-Gov Task Force identified 24 Government-wide opportunities to simplify and consolidate redundant Federal programs. One of those opportunities was in the area of wireless communications and became the Project SAFECOM E-Gov initiative. Given the critical importance of improving communications among the first responder community, the President's Management Council identified SAFECOM as one of the top three priority E-Gov initiatives out of the 24.

SAFECOM is a central part of the administration's strategy toward achieving the goal of improved interoperability among Federal, State, local, and tribal governments and organizations. Because over 90 percent of the Nation's public safety infrastructure is owned at the State and local level, SAFECOM was created to be a public safety practitioner-driven program. Its mission is to serve as the central point within the Federal Government to help public safety agencies across all levels of government to improve response through more effective and efficient wireless communications.

As the umbrella program for all Federal interoperability efforts, SAFECOM has developed a strategy with both short-and long-term milestones to fulfill that mission. The Department of Homeland Security is the managing partner of this initiative. Additionally, there are six partner agencies: the Departments of Defense, Energy, Interior, Justice, Health and Human Services, and Agriculture. All of these agencies are involved because of significant roles they play in public safety communications, emergency incident response and management, and law enforcement.

It is abundantly clear that in order for first responders and other public safety and law enforcement officials to effectively prevent, respond, and recover from disasters, whether their origin is natural or terrorist, they must be able to depend on interoperable communications. Unfortunately, until recently, each Federal agency had their own policies, standards, and equipment for the individual programs they administered. This problem was compounded at the State and local level as each public safety group used their own

equipment, standards, and procedures. To address these and other barriers to achieving interoperability, SAFECOM will accomplish the following four items.

The first item is the development of a national policy that promotes communications interoperability. SAFECOM is working within DHS and with its partners in the development of a national response plan, and the national incident management system is outlined in Homeland Security Presidential Directive No. 5. The goal of this directive is to enhance the ability of the United States to manage domestic incidences by establishing a single, comprehensive national incident management system. This effort is ongoing.

A second task is the development of a common set of requirements for the public safety interoperable communications. SAFECOM is collaborating with the public safety community to identify their needs. Once completed, this uniform set of requirements will be used by public safety organizations and industry to ensure that the organization's own requirements and the overall need for interoperable communications are fully met. This effort is underway.

A third SAFECOM activity will be the creation of standards that will provide a technical foundation for interoperable communications across the public safety community. SAFECOM and their State, local, and tribal partners are working with the National Institute of Standards and Technology to create standards for equipment, technology, and processes.

Finally, SAFECOM, with its partners, will develop a national wireless communications architecture that brings together the policies, requirements, and standards activities I just mentioned. This architecture will provide a framework for implementing interoperable communication solutions across agencies and jurisdictions at all levels, while preventing any new and eliminating existing islands of interoperability and communication stovepipes.

Successful achievement of those four activities clearly requires both inter-and intra-governmental collaboration. In addition to the Federal, State, local, and tribal partners already mentioned, both the Department of Justice Advanced Generation of Interoperability for Law Enforcement [AGILE] program and the Federal Communications Commission [FCC] play a critical role in this arena. SAFECOM and AGILE work together on a daily basis to make sure that tasks are coordinated and resources are used as effectively as possible. AGILE is a vital partner in the areas of standards development and outreach to the first responder community. The FCC has a critical role in solving the issue of limited ad fragmented spectrum, a barrier toward interoperability.

In closing, I would like to emphasize the administration's commitment to continue to work collaboratively across Federal agencies with Congress and State and local and tribal governments to overcome the interoperability challenges facing the first responder community.

While great strides have been made toward improving interoperability for our Nation's first responders, this is not a problem that can be solved overnight, or even in a year or two, but achievement of the SAFECOM goals will bring us much closer toward realizing interoperability. Collectively, we must continue to work toward de-

veloping a common set of requirements and standards for public safety communications.

I look forward to working with the committee on our shared goals to achieve interoperability and realize effective and efficient first responder communications.

[The prepared statement of Ms. Evans follows:]

STATEMENT OF
THE HONORABLE KAREN EVANS
ADMINISTRATOR FOR ELECTRONIC GOVERNMENT AND
INFORMATION TECHNOLOGY
OFFICE OF MANAGEMENT AND BUDGET
BEFORE THE
COMMITTEE ON GOVERNMENT REFORM
SUBCOMMITTEE ON NATIONAL SECURITY, EMERGING THREATS, AND
INTERNATIONAL RELATIONS
AND THE
SUBCOMMITTEE ON TECHNOLOGY, INFORMATION POLICY,
INTERGOVERNMENTAL RELATIONS, AND THE CENSUS
U.S. HOUSE OF REPRESENTATIVES

November 6, 2003

Good morning, Chairman Shays and Chairman Putnam, Ranking Member Kucinich, Ranking Member Clay, and Members of the Committees. Thank you for inviting me to speak about the communication challenges facing the first responder community. My remarks will focus on the Administration's strategy and progress to date in working with state, local, and tribal governments and organizations to address these challenges. Additionally, I will discuss our expected next steps and goals to successfully resolve with the community, this interoperability issue. Successful achievement of interoperable communications for all first responders throughout our country continues to be a priority for the Administration.

Background

As you know, OMB, working with Federal agencies, identified in the fall of 2001, 24 government-wide opportunities to simplify and consolidate redundant Federal programs, preventing unnecessary waste of taxpayer dollars. One of those opportunities was in the area of wireless communications, and became the Project SAFECOM electronic government (e-gov) initiative. Additionally, the President's Management Council (consisting of Department Deputy Secretaries) identified SAFECOM as one of three initiatives out of the 24 as a top priority.

The goal of SAFECOM is to provide interoperable wireless solutions for Federal, state, and local public safety organizations and ensure they can communicate and share information in response to emergency incidents. SAFECOM is the umbrella program for all Federal interoperability efforts and will work with State and local interoperability initiatives. SAFECOM will oversee several functions including coordination of all Federal interoperability efforts, development of a strategy including a short and long term vision and milestones to enhance first responder interoperability, and ensuring continued progress on SAFECOM-related initiatives. SAFECOM is working to ensure that Federal programs will encourage planning for and implementation of systems and agreements at

all levels that leverage existing capabilities and focus interim procurement and fielding actions to enhance interoperable communications.

As a result, the SAFECOM e-gov initiative is at the center of the Administration's strategy to address interoperability challenges. The Department of Homeland Security (DHS) is the managing partner with six additional agencies as partner agencies. The partner agencies include the Departments of Defense, Energy, Interior, Justice, Health and Human Services, and Agriculture. All of these agencies have significant roles to play in public safety communications, emergency/incident response and management, and law enforcement.

Specifically, SAFECOM's achievements and next steps include:

- **Develop common grant guidance.** The program has developed common guidance and plans to fully integrate it across the Federal government.

- **Sponsor the development of standards.** These standards will support a rational migration to national interoperability. This work is currently ongoing in partnership with the National Institute of Standards and Technology.

- **Create an interoperable information clearinghouse.** In addition to a programmatic web site, SAFECOM will create a clearinghouse for information related to interoperability. Estimated development is March 2004.

Challenges to Achieving Effective First Responder Communication

It is abundantly clear that in order for first responders and other public safety officials to effectively prevent, respond, and recover from disasters, whether natural or terrorist initiated, they must be able to depend on interoperable communications. Unfortunately, until recently, each Federal agency had their own policies, standards, and equipment for the individual programs they administered. This problem was compounded at the state and local level as each group (police, firefighters, etc.) each used their own equipment, standards, and procedures. Additional challenges identified include:

- Limited and fragmented radio spectrum – The spectrum allocated to the public safety community has been given out gradually over the last 75 years based on availability and requirements at particular times. As a result, public safety's spectrum is scattered across the multiple frequencies. Public safety has had to compete with commercial and other users of spectrum for a scarce resource, and increasing interference has been caused by heavy spectrum usage.

- Limited and fragmented planning and cooperation – There are over 2.5 million public safety first responders in some 45,000 agencies. Many of these agencies are small, often volunteer organizations with limited budgets, no engineering expertise, and a

distrust of Federal mandates. These agencies usually plan based on only their own local, intradepartmental needs.

The Federal government has also contributed to fragmented planning and funding in the past. Efforts to achieve interoperability have previously not been coordinated, funding and grants have been distributed without common guidance and Federal public safety agencies have not achieved interoperability between themselves.

- Limited and fragmented funding – There is insufficient funding in place to solve the nation's interoperability problem. Cost estimates are commonly estimated at over $15B and do not always include the costs of retraining, new infrastructure, or essential maintenance of new systems.

  Additionally, a multitude of programs on the Federal level provide funding for interoperable communications with no coordination of system requirements. In addition, State and local agencies have different acquisition requirements, planning cycles and technical requirements. In effect, each agency may be in a different stage of technology replacement.

Working in partnership with state, local, and tribal governments, SAFECOM will help to overcome some of these challenges. The initiative's goal to coordinate and simplify the Federal role in achieving interoperability is a critical part of our nation's ability to address this problem.

Coordination Across the Federal Government

As stated, SAFECOM's mission is to serve as the umbrella program within the Federal government to help local, tribal, State and Federal public safety agencies improve public safety response through more effective and efficient interoperable wireless communications. In addition to these groups and Federal agencies, SAFECOM is also working in partnership with other Federal offices with a role in this area.

SAFECOM and Department of Justice's Advanced Generation of Interoperability for Law Enforcement (AGILE) program are working together on a daily basis to make sure that tasks are coordinated and resources are used as effectively as possible. SAFECOM and AGILE will also be holding a joint planning session in early December to further coordinate their activities. Another agency, the Federal Communications Commission (FCC) obviously has a critical role in solving the issue of limited and fragmented spectrum, one of the key issues preventing interoperability.

Conclusion

The Administration will continue to work collaboratively across Federal agencies, with Congress, and State and local governments, to overcome the interoperability challenges facing first responders. To date, we have achieved some critical milestones along that path such as the coordination of grant funding across agencies.

While great strides have been made toward improving interoperability for our nation's first responders, this is not a problem that can be solved overnight – or even in a year or two. Particularly, as over 90 percent of the nation's public safety infrastructure is owned at the local and State level.

Collaborating with the public safety community, we need to continue to work toward developing a common set of requirements and standards for public safety communications. We also need a better understanding of existing solutions and where the gaps exist between the functionality those systems provide and what is needed for interoperability. All of these issues are currently being addressed by SAFECOM and their partners.

I look forward to working with the Committees on our shared goals to achieve interoperability and overcome other challenges on the path toward realizing effective and efficient first responder communications.

Mr. SHAYS. Thank you.

Before going to Dr. Boyd, I would like to recognize Mr. Schrock for an expression of appreciation.

Mr. SCHROCK. Thank you very much, Mr. Chairman.

At the end of last hearing I learned that Ms. Valicenti is going to be leaving her job with the State of Kentucky, and I am sad about that, but after 6 years in that pressure cooker, she wants to go on and do other things. And I just want to tell her that we appreciate very much the times you have come here, the knowledge you have given us. You have been a great help to us, and I think I speak for everybody here when I say thank you for the job you have done, and we wish you luck in whatever endeavor you take on after that.

Thank you.

Mr. SHAYS. We will note for the record silent applause. Thank you.

Dr. Boyd.

Dr. BOYD. Good morning and thank you, Mr. Chairman and members of the subcommittee, for the invitation to speak to you today.

While several programs have done important work in addressing interoperability, much of it has been disconnected, fragmented, and often conflicting. That is why SAFECOM was established as a high priority electronic government initiative to provide a national coordinating umbrella for Federal programs touching on interoperability. But SAFECOM is also a public safety practitioner-driven program with a customer base of over 44,000 local and State public agencies and more than 100 Federal agencies engaged in public safety disciplines such as law enforcement, fire fighting, public health, and disaster recovery.

Fixing the interoperability program will require a long-term coordinated effort among local, State, and Federal stakeholders, and the sheer size and diversity of the public safety community and the billions of dollars invested in existing communication systems means we cannot start with a blank slate. Our solutions will have to include: backward compatibility with legacy systems to protect those investments; leveraging of advances in technology through research, development, and testing; and development of a well defined set of requirements for interoperability that can steer the development of reliable standards to guide industry as it creates solutions, and localities and States as they purchase them. But we need solutions quickly, so we have begun several near-term initiatives to begin moving us in the right direction, including innovative developmental projects, testing and evaluating of equipment, the pursuit of better spectrum management policies and technology, coordination of grant guidance across the Federal Government, and identification and promotion of best practices.

In this last fiscal year, SAFECOM developed the Common Grant Guidance for use by Federal programs funding public safety communications equipment for State and local agencies. The COPS Office, FEMA, and the Office of Domestic Preparedness all incorporated this guidance into their public safety communications programs, thus producing the first multi-agency, multi-departmental coordinated approach to funding requirements for interoperability.

With the AGILE Project, we also organized and funded the peer review process for the joint grant solicitation from COPS and FEMA, and with the National Institute of Science and Technology held a summit on interoperability as a critical first step in identifying all the Federal and national programs currently involved in public safety communications.

This year we will complete the initial draft of the first Statement of Requirements for Public Safety Communications Interoperability. This Statement of Requirements will serve as the basis for SAFECOM's technology efforts. And about 2 weeks ago we issued a request for information to gather information from industry on current technologies to enhance interoperability that are either available now or under development, and we have begun collecting information on current technologies through vendor days.

In our coordinating role, we are collaborating with the Department of Justice in the development of interoperability between Federal agencies and local public safety in 25 critical cities, and have begun discussions with the Department of Agriculture on a possible joint effort to explore radio over IP. We continue to support the Capital Area Wireless Integrated Network Demonstration project because it exhibits model governance structures and technology implementation for multi-disciplinary and multi-jurisdictional data sharing, and because it offers an example of how to incorporate new technologies into emergency communication systems.

And, finally, SAFECOM is developing an interoperability information portal to provide information to public safety agencies through an integrated central cite which will include, as one example, a scorecard tool that can be used to identify and track public safety progress on interoperable communications. Some of this effort leverages the work of the former Public Safety Wireless Network program now fully absorbed into SAFECOM.

We believe we have made significant progress in establishing SAFECOM as the umbrella program for interoperability within the Federal Government, and gaining the confidence of the State and local public safety community who own and operate more than 90 percent of the Nation's public safety infrastructure, without whom this effort cannot succeed. We are, with all our partners, working toward a world where lives and property are never lost because public safety agencies cannot communicate. The bottom line? There are no simple solutions and no quick fixes, but the problem is not insoluble if we marshal our resources and work together.

I would be happy to answer any questions.

[The prepared statement of Dr. Boyd follows:]

David G. Boyd, Ph.D.
Director, SAFECOM Program Office
Directorate of Science and Technology
Department of Homeland Security

TESTIMONY
COMMITTEE ON GOVERNMENT REFORM
SUBCOMMITTEE ON NATIONAL SECURITY, EMERGING THREATS, AND INTERNATIONAL RELATIONS
SUBCOMMITTEE ON TECHNOLOGY, INFORMATION POLICY, INTERGOVERNMENTAL RELATIONS AND THE CENSUS
HON. CHRISTOPHER SHAYS, CONNECTICUT, CHARIMAN
HON. ADAM PUTNAM, FLORIDA, CHAIRMAN
November 6, 2003, 10:00AM
Rayburn House Office Building, Room 2154

Good morning and thank you, Mr. Chairman and Members of the Subcommittee for the invitation to speak to you today. I appreciate your interest in SAFECOM and am grateful for this opportunity to address the important issue of public safety interoperable communications before you.

Public Safety Background

Inadequate and unreliable wireless communications have been an issue plaguing the local, tribal, State, and Federal public safety community for decades. By definition, communications interoperability refers to the ability of public safety agencies to talk across disciplines and jurisdictions via radio communications systems—to exchange voice, data and/or video with one another on demand, in real time, when needed. From the 1920's, when two-way radio communication began, spectrum was allocated as needed with little planning and no consideration of cross-jurisdictional interoperability. As observed in the National Task Force on Interoperability (NTFI) report released in February 2003, almost all public safety communications were originally confined to the low end of the frequency range. But as technology improved and increasing numbers of agencies began to set up radio communications systems, more radio spectrum was required and transmission at higher frequencies became both necessary and technologically possible. Hence, the Federal Communications Committee (FCC) assigned frequencies in different bands, offering a temporary solution for congestion and crowding. The result is that public safety currently operates in ten separate bands, which has contributed to the fragmentation that characterizes public safety spectrum today and the consequent lack of public safety interoperability. On-going problems related to interference, overcrowding, and proprietary solutions still hamper the most effective use of the limited and fragmented public safety spectrum.

Spectrum issues are not simply technical problems requiring engineering solutions. Policies surrounding the use of spectrum—a limited resource sought by competing

private and governmental interests—restrict public safety's ability to use it more efficiently. For example, in 1997, Congress allocated 24 MHz of spectrum in the 700 MHz band specifically to public safety. Unfortunately, most of the 700 MHz spectrum allotted to public safety is blocked by television broadcasts on channels 63, 64, 68, and 69, especially in major metropolitan areas. These television stations are permitted to stay in the 700 MHz band until 85 percent of the households in their market areas have televisions capable of receiving digital television (DTV) signals. Currently only 14 percent of the current television sets in the U.S. are capable of receiving DTV signals. Despite allocation of this spectrum to public safety, no set date for the transfer of this spectrum has been established that would require existing users to vacate the 700 MHz band and – under current legislation – none can be set until 85% of the viewing audience in a coverage area is able to receive digital format broadcasts. The result is that public safety is unable to make use of this much-needed spectrum, on which lives may depend in daily public safety operations, and in the next disaster.

The fragmentation and limited availability of spectrum are just two of the many issues that make public safety communications interoperability difficult to achieve. Others, such as those cited in the NTFI report – including incompatible and aging equipment, limited and fragmented funding, limited and fragmented communications planning, limited equipment standards, and a lack of coordination and cooperation among public safety agencies – further reduce public safety's ability to achieve interoperable communications.

SAFECOM Approach

The lack of public safety interoperability is clearly a long-standing, complex, and costly problem with many impediments to overcome. While several government programs have made great strides in addressing this issue, much of this work has been disconnected, fragmented, and often conflicting. In an effort to coordinate the various Federal initiatives, SAFECOM was established by the Office of Management and Budget (OMB) and approved by the President's Management Council (PMC) as a high priority electronic government (E-Gov) initiative. The mission of SAFECOM is to enable public safety nationwide (across local, tribal, State, and Federal organizations) to improve public safety response through more effective and efficient interoperable communications. SAFECOM recognizes that before interoperability can occur, reliable, mission-critical, agency-specific communications capable of meeting day-to-day operational needs is a sine qua non. SAFECOM, accordingly, is addressing the intricately related issues of reliable day-to-day public safety communications as well as the more specialized issues related to communications interoperability.

Unlike many other E-Gov initiatives, the solution to the problems of public safety communications and communications interoperability—short of a major overhaul of how spectrum is allocated and managed in this country—is not a single, nor even a particular *set,* of discrete tasks. There are no simple solutions. Instead, the identification and orchestration of existing programs is required.

For SAFECOM to accomplish its mission, a systematic approach will be employed, and will include the following components:

- Identification of the problem, recognizing that it is a simple problem with many complex elements and no single solution.
- Collaboration with the leadership of the public safety community, especially at the local and State level, to gather comprehensive communications requirements in order to develop appropriate work packages. (This is essential since 90% of the public safety infrastructure is owned by State and/or local public safety entities.)
- Identification of current initiatives addressing interoperable communications issues and development of a coordination strategy to leverage existing work, while decreasing unnecessary duplication of efforts.
- Implementation of a strategy to develop short- and long-term projects addressing public safety communications and communications interoperability requirements.

By leveraging the knowledge and expertise of the public safety community, and by integrating other programs addressing this same issue, SAFECOM has already saved time and money in identifying the key issues, needs, and existing efforts. For example, by adopting a process already underway in the public safety community to develop a statement of requirements for interoperability, SAFECOM was able to release $500,000 allocated for that effort to other purposes. The efforts of the Federal Emergency Management Agency (FEMA), in recognizing the key leaders for this issue in the public safety community, engaging them in a strategic dialogue, and establishing the governance structure for SAFECOM have provided an essential foundation for the program. It became clear, however, that to address many of the problems, a technical capability would be necessary to deal with issues such as spectrum, standards, and the development and incorporation of emerging communications technologies. As the Department of Homeland Security (DHS) stood up, the Science and Technology Directorate (S&T) became the obvious home for SAFECOM. At S&T, SAFECOM is building on FEMA's foundation work and developing strategies to address immediate public safety communication needs while creating a long-term migration strategy that will produce more spectrally efficient systems.

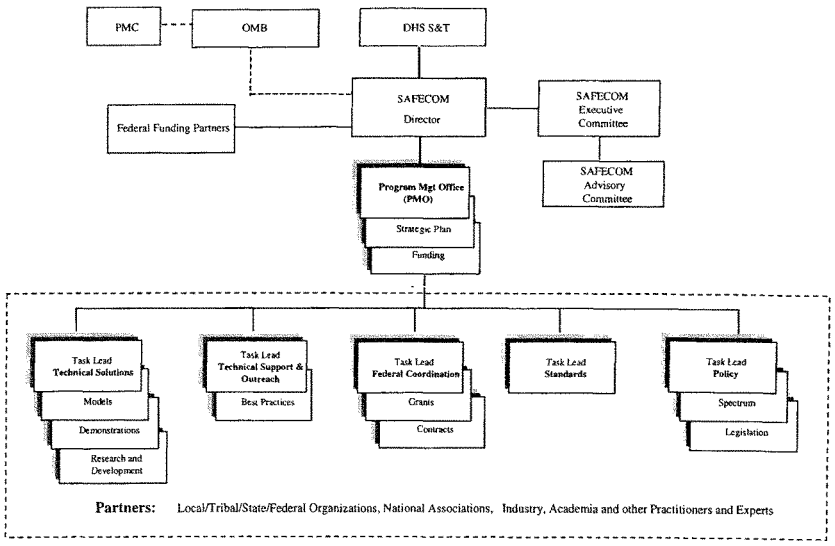
SAFECOM Governance

It is essential that a program which touches on systems managed by state and local public safety agencies be acceptable to those who rely on them. SAFECOM, therefore, has been designed as a program that works directly with public safety personnel, so that it is a genuinely *public safety practitioner driven program*, SAFECOM is working with existing Federal communications initiatives and key public safety stakeholders to address the need to develop better technologies and processes for the cross-jurisdictional and cross-disciplinary coordination of existing systems and future networks. The scope is

broad. The customer base includes over 44,000 local and State public safety agencies and organizations. Federal customers include over 100 agencies engaged in public safety disciplines such as law enforcement, firefighting, public health, and disaster recovery.

As a result, SAFECOM has developed a governance structure that incorporates these diverse stakeholders. Below is a chart representing SAFECOM's governance structure followed by a list of organizations represented in its Executive Committee. SAFECOM is leveraging the collective knowledge and expertise of the leadership of the national public safety associations to ensure that the projects pursued are inline with the communication needs of public safety practitioners.

SAFECOM Governance Structure



SAFECOM Executive Committee Membership

Organization
Association for Public-Safety Communications Officials-International, Inc. (APCO)
Department of Homeland Security (DHS) Science & Technology (S&T)
DHS

Department of Justice (DOJ)
Federal Law Enforcement Wireless User Group (FLEWUG)
International Association of Chiefs of Police (IACP)
Major Cities Chiefs (MCC)
National Sheriffs' Association (NSA)
Major County Sheriffs' Association (MCSA)
International Association of Fire Chiefs (IAFC)
National Association of Counties (NACo)
National Governors Association (NGA)
National League of Cities (NLC)
Office of Management and Budget (OMB) (Ex-officio)
United States Conference of Mayors (USCM)
Public Safety At Large Representative

To serve its diverse customer base, SAFECOM is also uniquely situated to draw upon the experiences of other Federal programs engaged in public safety communications work in order to promote improved technologies, standards, and policies. For example, SAFECOM is currently working in partnership with the AGILE Program of the Office of Science and Technology of the Justice Department to create a comprehensive public safety communications Statement of Requirements. Additionally, SAFECOM and AGILE have partnered with the Office of Community Oriented Policing Services (COPS) and FEMA to develop a collaborative grants database that will assist funding agencies in deconflicting public safety communications grants. Another exemplary SAFECOM partnership is with the National Institute of Standards and Technology (NIST) Office of Law Enforcement Standards (OLES). Through this partnership, SAFECOM is supporting the testing of Project 25 radios for standard compliancy.

Long-term Initiatives

How do we solve the interoperability issue? The answer is not simple and there is no one-size–fits-all answer. An integrated solution will require a long-term coordinated effort between local, State and Federal stakeholders, coupled with a large capital investment and a willingness to embrace needed changes in policies. To begin to scope the framework for interoperable communications, SAFECOM identified four core focus areas in which to concentrate in order to achieve interoperability across the Nation.

- **Develop a technical foundation**. The sheer size and diversity of the public safety community, coupled with the billions of dollars invested in existing communication systems, requires that SAFECOM create a framework from which to best pursue interoperability while retaining backwards compatibility with legacy systems. The technical foundation on which SAFECOM begins to develop a system-of-systems approach requires leveraging the ever-increasing changes in technology through increased research, development, and testing. SAFECOM will further work to define the requirements for interoperability and develop the

standards that will both guide industry as it creates solutions and guide localities and States as they purchase them. This will ensure that the technologies that provide the ultimate framework for interoperability are mainstream, scalable, and standards based. To this end, SAFECOM will evaluate and validate new technology concepts through mid-term demonstration projects in order to foster acceptance of them within the public safety sphere.

- **Provide policy recommendations**. Spectrum policy is an essential issue in the public safety communications arena. Unfortunately, local and State public safety representatives are frequently not included in spectrum policy decisions, despite their majority ownership of the communications infrastructure and their importance as providers of public and homeland security. SAFECOM will hence play a key role in representing the views of local and State stakeholders on spectrum issues within the Federal government. Recently, SAFECOM was appointed to the White House Spectrum Task Force to contribute such views and will help SAFECOM become more integrated in spectrum policy decisions. Through the recent creation of the Federal Coordination Council (Council), SAFECOM will continue to coordinate the policy efforts of various federal agencies on issues related to spectrum, grants, technical assistance, and a variety of other topics to further represent and promote the views and needs of State and local public safety.

- **Coordinate funding assistance**. To ensure that Federal money is efficiently spent and does not inadvertently create stovepiped systems at the local and State levels, SAFECOM will help the Federal government tie grant funding for public safety communications planning, equipment, training, and assistance to consensus grant guidance. This guidance will include standards and requirements to ensure that localities and States are taking into account broader interoperability needs and purchasing appropriate interoperable solutions. In addition, information about best practices, grant funding, and equipment purchases will be made available to the public safety community through a central repository.

- **Provide technical assistance**. Planning for, implementing, training on, and maintaining public safety communication systems are major tasks requiring resources many public safety agencies don't have. Hence many localities and States will need technical assistance to achieve the goal of interoperability. While there are various Federal efforts providing assistance to local and State agencies, SAFECOM will serve as a coordinator of these initiatives as it supports the development and promulgation of coordinated best practices (including ways to improve spectrum efficiency, guidance on effective governance structures, and ways to leverage mutual assistance agreements), handbooks and publications, and technical support methodology in the implementation of communications systems.

Short-term Initiatives

With these long-term goals in mind as part of an overall framework for interoperability, we have begun short-term initiatives that promote improved communications and interoperability by funding innovative demonstration projects, testing and evaluating equipment for interoperability, pursuing better spectrum management policies and technology, coordinating grant guidance across the federal government, and identifying and promoting best practices. At a strategic planning meeting on May 30th 2003, SAFECOM took the advice of its stakeholders and began work on five short-term initiatives. These efforts are in line with the broader long-term goals listed below, but provide shorter term results in the improvement of public safety communications and interoperability. Below is a listing of current and completed SAFECOM projects that highlight immediate ways to promote enhanced communication and interoperability.

- **Coordinate Funding Assistance**
  In FY 2003, SAFECOM developed grant guidance in line with the needs of public safety for use by Federal programs funding public safety communications equipment to State and local agencies. COPS, FEMA, and the Office of Domestic Preparedness (ODP) incorporated this guidance into their public safety communications grants. This guidance marked the first coordinated approach to funding requirements. In further support of the coordinated grant process, SAFECOM organized and funded the peer review process for the joint grant solicitation from COPS and FEMA. SAFECOM also supported the NIST Summit on Interoperability that was the first step towards identifying all the Federal and national programs involved in public safety communications so that a broader coordination effort can continue.

  SAFECOM, along with the AGILE Program, assisted FEMA and COPS in coordinating their grant administration processes by supporting the development of the beta version of a database clearinghouse on communication grants. This Grants Clearinghouse will help eliminate unnecessary duplication of funding and evaluation efforts; deconflict the application process; maximize the efficiency of limited funding and resources within the Federal agencies; track progress over time as to the amounts of funding, award recipients, and historical progress of interoperability goals; and begin data collection for eventual incorporation into lessons-learned documents.

  In FY 2004, SAFECOM will continue supporting NIST's effort to identify Federal programs involved with public safety communications and create a catalogue of programs to enhance public safety's access to the program's resources. Additionally, SAFECOM will improve and incorporate its grant and funding guidance across all Federal-funding initiatives targeted at improving public safety communications, while releasing the public safety grant database to such agencies to begin data population.

- **Technology Development**

In FY 2003, SAFECOM will complete the initial draft of a Statement of Requirements (SoR) for public safety communications. This SoR is the first comprehensive document on the functional requirements for public safety communications, and will serve as SAFECOM's basis for its technology efforts. SAFECOM has also issued a Request For Information (RFI) to gather input from industry on current technologies available or under development to enhance interoperability. At the same time, information on current technologies is being collected through "vendor days" in which companies can present their ideas to SAFECOM staff. Through the RFI and vendor days, SAFECOM can ascertain what technologies and products exist so that the program can more specifically focus on promoting the acceptance of such technologies through demonstration projects.

SAFECOM has already begun supporting such demonstration projects by collaborating with the Department of Justice's (DOJ) 25 Cities Project. Through this collaboration, SAFECOM is assisting the State and local agencies in the predetermined 25 cities by funding interoperability solutions in these major metropolitan areas. SAFECOM's reach, however, extends across all geographic areas, as is exemplified in the funding of a demonstration project in the base of the Grand Canyon with the Havasupai Tribal Nation. With no communications infrastructure accessible, SAFECOM is supporting the use of technologies to improve the Tribe's communication capabilities. SAFECOM's reach also extends beyond land mobile radio systems, as it looks toward other forms of communication, including wireless data sharing. In this vein, SAFECOM supports the Capital Area Wireless Integrated Network (CapWIN) demonstration project that exhibits model governance structures and technology implementation for multi-disciplinary and multi-jurisdictional data sharing. Based on CapWIN's success to date, SAFECOM plans to promote the CapWIN model to other areas around the country as an example of how to incorporate new technologies into emergency communication systems. Such demonstration activities will continue in FY 2004 through the release of a Broad Agency Announcement (BAA) soliciting applications for public safety communications interoperability demonstration projects.

Upon the release of the completed SoR for public safety communications, SAFECOM will participate in the International Symposium on Advanced Radio Technologies (ISART). Participation in ISART affords SAFECOM the opportunity to help shape the direction in which the advanced radio technology research community is heading by providing the needs and requirements of public safety. SAFECOM also will draw upon ISART as a means to further define the direction that SAFECOM pursues in its research and development initiatives.

- **Policy Recommendations**
  In addition to the demonstration projects and development of a research agenda, SAFECOM is concurrently serving in another, highly important role as the representative for State and local public safety on the White House's Spectrum

Policy Task Force. As the only representative for State and local needs, SAFECOM will continue to provide the Task Force with information and views from the State and local communities.

- **Technical Assistance**
  And finally, in the near-term, SAFECOM is developing an interoperability information portal that will provide information to public safety agencies through an integrated, central site. This site will serve as a one-stop shop for public safety agencies. Specifically, the cite will also include tools such as a "scorecard" that will be used to identify and track public safety's progress on interoperable communications. Much of this type of education and outreach will leverage the work of the former Public Safety Wireless Network program, which has now been absorbed by SAFECOM.

Conclusion

The many obstacles facing public safety interoperability make it a complex problem with no one-size-fits-all or quick solution. Flexible and dynamic resolutions are necessary to combat the unique challenges presented by distinct localities and States. SAFECOM has made significant progress in achieving a number of its short-term goals and thus working towards its mission and establishing itself as the umbrella program within the Federal government coordinating with local, tribal, State, and Federal public safety agencies to improve public safety communication and interoperability, but much remains to be done. SAFECOM, with its partners, is working towards a world where lives and property are never lost unnecessarily because public safety agencies are unable to communicate.

Mr. SHAYS. I am so grateful you stopped because we didn't hit the clock. It is the first time in my 16 years that I remember that not happening. You could have gone on forever, sir. So thank you very much.

Dr. Morgan, you won't be so lucky. You are on.

Dr. MORGAN. Oh, well, I will try to keep to the 5 minutes.

Good morning, Mr. Chairman, Mr. Clay, Mr. Kucinich, members of the subcommittees. I am John Morgan, Acting Assistant Director for Science and Technology of the National Institute of Justice. NIJ is the research, development, and evaluation arm of the Department of Justice and a component of the Department's Office of Justice Programs. I am pleased to appear before you today to discuss the history of NIJ's AGILE program, you have heard some of it already today, and to present current interoperability solutions and discuss research and development plans that can help the law enforcement and first responder communities develop long-term interoperability solutions.

NIJ established the AGILE program to assist State and local law enforcement and public safety agencies in effectively and efficiently communicating with one another, using both voice and data, across agency and jurisdictional boundaries. AGILE accomplishes its mission through four main program components: supporting research and development of technology; testing, evaluating, and demonstrating technologies; developing technology standards; and educating and reaching out to public safety practitioners and policymakers. AGILE is helping bridge the gap in emergency communication by identifying, adopting, and developing interoperability solutions that include open architecture, not proprietary standards, for voice, data, image, and video communications systems.

AGILE serves all of public safety, but is primarily focused on law enforcement's unique needs. For example, police in general care first and foremost about solutions for day-to-day operations in criminal justice problems. Such solutions, which use open architecture and support day-to-day needs, will also serve where multiple parties need to exchange information on the spot, at critical incidents.

Much of AGILE's success can be attributed to its partnership with several of NIJ's regional technology centers, especially the Rocky Mountain and Northeast centers, and its partnership with the National Institute of Standards and Technology. These facilities have performed much of the work that you will hear about today and are included in the written testimony in more detail.

AGILE actually dates back to the mid-1990's, actually under the able leadership and vision of Dr. Boyd, when he sat as the Director of the Office of Science and Technology within NIJ. The first system that NIJ pursued at that time was BORTAC, the Border Tactical Communications System, which connected the dispatch centers of 12 agencies operating in San Diego County, including the Border Patrol, INS, California Highway Patrol, San Diego Police Department, and others. BORTAC, which has actually been operational since 1996, demonstrated early on that overcoming institutional and cultural barriers in developing interoperable systems is often more important and more difficult than overcoming existing technical barriers. It actually took 2 years to bring everybody to-

gether on the same page about what to do at BORTAC and only 2 months to implement the technical solution.

NIJ's interoperability projects portfolio grew after that to include many other interoperability research projects and data and information sharing projects such as InfoTech in southern Florida and COPLINK in Arizona, and the development of the leading standard that is helping to solve this problem right now, the P–25 digital wireless standard.

In April 2002, NIJ convened NTFI. Again, you have heard about NTFI today from Marilyn Ward and others, and the staff has the summary pamphlet on the NTFI guide that came out of the convening of that group, "Why Can't We Talk? Working Together to Bridge the Communication Gap to Save Lives," an excellent resource for those of you who want to see the major issues in interoperability and what public safety professionals have to say about it.

NIJ has also developed a strong partnership between its AGILE program and the Wireless Public Safety Interoperable Communications program, the E-Gov initiative known as SAFECOM. AGILE's years of experience in the areas of technology research and development, standards development, and outreach and support to the public safety community and national associations enable it to assist SAFECOM in fulfilling its mission. In fact, as we talk today, AGILE technical representatives are working with SAFECOM on operational requirements in interoperability elsewhere in this town.

To best integrate the respective programs, AGILE and SAFECOM have merged their planning in these areas of common interest. In order to meet the need for short-term interoperable solutions, NIJ has created a process to research, evaluate, test, and implement commercially available technologies, including the ACU–1000 and other communications switches. The ACU–1000 is actually operational right now in Alexandria, VA.

Another area that we have been very, very much involved in and is a technology development area is software defined radio [SDR], which shows the breadth of the NIJ AGILE program. SDR technology replaces the internal hardware of a mobile radio system with flexible software and promises to provide portable radios that can adapt to many different radio environments. NIJ funded the development of a particularly innovative approach that accomplishes all of the radio's signal processing using a typical general purpose processor such as a Pentium chip. This approach has been demonstrated using a hand-held pocket PC to emulate a public safety radio, and we have successfully demonstrated the ability of this laboratory prototype to emulate a vast array of radio types across a wide range of frequencies and protocols.

So what this is, members of the committee, is a PDA, a compact, pocket PC PDA, with an RF amplifier on the back, and this little device can emulate, for much less cost than the average radio, honestly, hundreds of different radio types, regardless of frequency and protocol, across a very, very wide range. This is something that I think going to be part of the solutions for public safety in the long run.

NIJ isn't saying that this is the only solution. What we are trying to do is create a range of solutions that can be adapted to a wide range of environments across the pubic safety community.

Mr. SHAYS. Just a quick question. Is that voice and text?

Dr. MORGAN. Yes.

Mr. SHAYS. We need to have you wrap up here.

Dr. MORGAN. I will wrap that up. I wanted to show off my cool toy.

And we are also, of course, working with public safety associations to provide for how such systems can be implemented in public safety and in a regulatory environment.

I appreciate the committee's interest in this very, very vitally important area of interoperable communications.

[The prepared statement of Dr. Morgan follows:]

Department of Justice

STATEMENT

OF

JOHN MORGAN, Ph.D.
ACTING ASSISTANT DIRECTOR FOR SCIENCE AND TECHNOLOGY
NATIONAL INSTITUTE OF JUSTICE
OFFICE OF JUSTICE PROGRAMS

BEFORE THE

COMMITTEE ON GOVERNMENT REFORM
SUBCOMMITTEE ON NATIONAL SECURITY, EMERGING THREATS, AND
INTERNATIONAL RELATIONS AND THE
SUBCOMMITTEE ON TECHNOLOGY, INFORMATION POLICY,
INTERGOVERNMENTAL RELATIONS AND THE CENSUS
UNITED STATES HOUSE OF REPRESENTATIVES

REGARDING

INTEROPERABLE COMMUNICATIONS TECHNOLOGY

ON

NOVEMBER 6, 2003

Good morning Mr. Chairmen, Mr. Clay, Mr. Kucinich, and Members of the Subcommittees. I am Dr. John Morgan, Acting Assistant Director for Science and Technology of the National Institute of Justice (NIJ). As you know, NIJ is the research, development, and evaluation arm of the Department of Justice, and is a component of the Department's Office of Justice Programs. I am pleased to appear before you today to discuss the history of NIJ's Advanced Generation of Interoperability for Law Enforcement (AGILE) Program, to present current interoperability solutions, and to discuss research and development plans that can help the law enforcement and first responder communities develop long-term interoperability solutions.

AGILE's Mission

As you are aware, during incidents such as multiple car accidents, natural disasters, domestic terrorism, or high-speed pursuits, public safety officials from different disciplines, and even different states, have an immediate need to talk to one another. They need to share information effortlessly or lives can be lost. Often, however, police officers, firefighters, emergency medical personnel, and other public safety officials cannot depend on wireless communications in an emergency, hindering their ability to respond. Interoperability allows multiple parties to exchange information seamlessly – when and where it is needed. AGILE is helping bridge the gap in emergency communications by identifying, adopting, and developing interoperability solutions that include open architecture standards for voice, data, image, and video communications systems. These solutions will allow multiple parties to exchange information on the spot – no matter where that "spot" is. It will let users exchange information among fixed facilities, mobile platforms, and even personal devices.

AGILE also researches new technology solutions when existing technologies used in an emergency response fall short, and aims to raise the awareness of interoperability issues through various outreach programs so that policymakers and public safety leaders can make informed and cost-effective decisions.

Overall, the AGILE Program's mission is to assist state and local law enforcement and public safety agencies to effectively and efficiently communicate with one another, through both voice and data media, across agency and jurisdictional boundaries. AGILE accomplishes its mission through four main program components: (1) supporting research and development of technology; (2) testing, evaluating, and piloting technologies; (3) developing standards; and (4) educating and reaching out to public safety practitioners and policymakers.

Much of AGILE's success can be attributed to the partnership with several of NIJ's regional technology centers, especially the Rocky Mountain and Northeast centers, and a partnership with the National Institute of Standards and Technology's (NIST) Office of Law Enforcement Standards (OLES).

AGILE's History

One of NIJ's earliest interoperability projects, undertaken in the mid-1990s, connected the dispatch centers (radio communication systems) of 12 agencies operating in San Diego County, including the Immigration and Naturalization Service, California Highway Patrol, and San Diego Police Department. The Border Tactical Communication System, or BORTAC, was undertaken jointly with the Office of National Drug Control Policy and the U.S. Navy's Public Safety Center in San Diego. BORTAC, which has been operational since 1996, demonstrates

that overcoming institutional and cultural barriers in developing interoperable systems is often even more important than overcoming existing technical barriers.

Following BORTAC, NIJ's interoperability projects portfolio grew to include InfoTech in southern Florida and COPLINK in Arizona, along with continued funding support for the development of the P-25 (NTIA 102 Series) digital wireless standard. The NIJ-funded study, "State and Local Law Enforcement Wireless Communications and Interoperability: A Quantitative Analysis," was released in 1998, and further demonstrated the importance of interoperable communications to public safety. In late 1998, NIJ formed the AGILE program to coordinate these projects, along with additional awards for technology development in fields such as software defined radio (SDR).

AGILE's Support for Public Safety & Policymakers

A basic tenet of the AGILE Program is to help build consensus among existing national organizations and associations representing state and local public safety. The 45,000+ public safety agencies in this country do not have a single entity or organization to represent their activities and interests. Rather, because of the diversity among these agencies, it takes a federation of associations representing public safety telecommunications, the National Public Safety Telecommunications Council (NPSTC), to present a collective "voice" on communications issues. As part of the AGILE Program, NIJ provides support to the Council by creating and funding the work of a NPSTC Support Office, located at NIJ's Rocky Mountain regional technology center, which acts as the secretariat for this diverse organization.

NIJ's strong relationship with the public safety communications leadership is allowing the AGILE program to move forward in institutionalizing the issue of interoperability for state

and local leaders. In April 2002, NIJ convened the National Task Force on Interoperability (NTFI), a collection of state and local elected and appointed officials and their representative associations, to develop a set of materials to explain the issue and importance of interoperability from the funding policymaker's perspective. In February 2003, NTFI released a guide for public officials titled, "Why Can't We Talk? Working Together To Bridge the Communications Gap To Save Lives," which has received much favorable attention.

The AGILE/SAFECOM Partnership

The AGILE Program has developed a strong partnership with the Wireless Public Safety Interoperable Communications Program (SAFECOM). SAFECOM is the umbrella program within the federal government created to help local, tribal, state, and federal public safety agencies improve public safety response through more effective and efficient interoperable wireless communications. AGILE's years of experience in the areas of technology research and development, standards development, and outreach and support to the national associations enable it to assist SAFECOM in fulfilling its mission. To best integrate the respective programs, AGILE and SAFECOM have merged their planning in these areas.

Short-Term Interoperability Solutions

Federal programs will encourage planning for and implementation of systems and agreements at all levels that leverage existing capabilities and focus interim procurement and fielding actions to enhance interoperable communications. Mutual aid agreements should provide detailed plans, protocols, and procedures for ensuring effective near-term interoperable communications among local and regional jurisdictions, and provide a means to efficiently implement longer-term Project SAFECOM objectives.

In order to meet the need for short-term interoperable solutions, NIJ has created a process to research, evaluate, test, and implement today's commercially available technologies. The law enforcement community's immediate interest has been in "interoperability gateways," hardware and software that can bridge disparate radio systems. The AGILE program has tested and evaluated gateway products from several vendors, including the ACU-1000 from Raytheon Corporation and the ICRI from Communication-Applied Technology, and is in the process of evaluating several other products, including the new software-based gateway from SyTech Corporation. These products typically are tested first in a laboratory to determine their potential suitability for operation in a public safety environment.

Following extensive lab tests, the products are placed in an operational test bed. An example of an operational test bed is the interoperability gateway subsystem that has been installed at the Alexandria, Virginia, Police Department's (APD) communications center. The system used there, an ACU-1000, has effectively tied together the radio systems of various public safety agencies in metropolitan Washington, D.C. The result is that the region's multiple law enforcement and public safety agencies that use radio systems operating in different frequency bands, or use the same frequency band but with incompatible equipment, now have direct voice radio communications with each other. Lessons learned from the operational test beds are then promulgated through discussions of the AGILE program by NIJ staff and others at conferences, through the AGILE Web site, through NIJ publications, and through a CD-ROM (AGILE Interoperable Resource CD).

The extent of AGILE's success in Alexandria became apparent in early 2002 when the Washington Area Council of Governments (COG) Police and Fire Chiefs committees adopted

the APD model as the region's communications interoperability system. That marked the beginning of the Metropolitan Interoperability Radio System (MIRS). The COG Police and Fire Communications subcommittees established an area-wide protocol for the operation and execution of the system, and more public safety agencies continue to be added to the MIRS.

Through NIJ's partnership with NIST's Office of Law Enforcement Standards, NIJ works with the National Telecommunications and Information Administration (NTIA) and other key organizations to identify, develop, and adopt open architecture standards for voice, data, image, and video communication systems for the public safety community. We are currently involved in development of several standards and specifications for public safety wireless systems.

One such example is NIJ's support for the Telecommunications Industry Association's (TIA) 102 Series of radio standards, which define how digital voice radio equipment from different manufacturers can talk to each other. (The TIA 102 Series is also known as the Project 25, or P-25 Standard.) To date, only one out of seven sections of the P-25 standard have been approved. An overall objective of the AGILE program is to help accelerate and promote further development of the P-25 standard. This is especially true of the Inter-RF SubSystem Interface, which will allow disparate radio frequency subsystems to be interconnected to form a wide-area network. P-25 will have only a limited impact without completion of this and the other P-25 sections.

Through the Institute for Telecommunications Sciences lab in Boulder, Colorado, the AGILE program is performing compliance testing in conjunction with the Federal Law Enforcement User's Group to ensure that systems comply with P-25 standards for transmitter, receiver, and infrastructure characteristics – a process necessary for radio system planning and

design. The lab also is performing testing that demonstrates the interoperability of radio systems from different vendors, which is necessary for operational assurance.

NIJ is also participating in the development of the Project MESA (Mobility for Emergency and Safety Applications) standards. Project MESA responds to the growing demand for high-speed digital wireless systems to support public services such as public safety. It is one of the first international partnerships between industry and user organizations created to address the need for a globally accepted broadband wireless standard.

In addition to voice technologies, the AGILE program has examined other wireless information sharing initiatives, such as the Capital Wireless Integrated Network (CapWIN) project. CapWIN is a partnership of communities and agencies serving the Capital Region (Washington, D.C., Maryland, and Virginia) that are working together to develop an integrated mobile data wireless public safety network. This network will provide interagency communications to over 40 local, state, and federal agencies to ensure a coordinated response to any public safety incident that occurs in the Washington D.C. region. This innovative wireless communication system will serve as a model of open architectures and standards that can be replicated across the nation.

Long-Term Research and Development of Interoperability

Through the AGILE program, NIJ is helping to develop potential enabling technologies, such as Voice over Internet Protocol (VoIP) and software defined radio (SDR), both of which may play an important role in defining future interoperable communications systems. SDR technology, which replaces the internal hardware of a mobile radio system with flexible software functionality, promises to move us beyond the capabilities of today's mobile radio technology by

providing the dynamic ability for portable radios to adapt to multiple disparate radio environments. NIJ funded the development of a particularly innovative approach that accomplishes all of the radio's signal processing using a typical general purpose processor, such as a Pentium chip. This approach has also demonstrated success at using a handheld Pocket PC to emulate a public safety radio.

Another software defined radio project being developed through NIJ's Southeast Regional Technology Center and the Navy's Space and Naval Warfare Systems Center, both located in Charleston, SC, will be used as a test platform to determine whether it is feasible for public safety to use the Department of Defense's software radio architecture developed by the Joint Tactical Radio System (JTRS) Joint Program Office. We expect to be able to determine in the next 12-18 months whether the JTRS software will be a viable approach for use by public safety.

AGILE also worked with the National Public Safety Telecommunications Council to create an SDR Working Group, and then reached out to industry's SDR Forum, a consortium of over 120 companies that are involved in SDR, to determine their interest in working with the NPSTC's group. This relationship has flourished to the point that one member of the NPSTC group is now on the Forum's Board of Governors, and they are in the advanced planning stages of demonstrating this technology to various public safety agencies.

Through the AGILE program, NIJ is also evaluating the use of VoIP technology as a way to enhance the options for communicating in a voice radio patch. VoIP solutions from various companies are currently being explored, tested in the lab, and evaluated in the Alexandria

operational test bed. At the request of NPSTC, AGILE will also undertake a study in FY 2004 to determine the feasibility of assigning unique IP addresses to all radio equipment in the future.

Identification of Future Interoperable Communications Solutions

The key to developing a long-term interoperable solution is first to identify what the solutions need to accomplish. Once we know what needs to be accomplished, we can develop a technical description of the solutions that will meet this need. While we may not know today the exact configuration of these solutions, there is much that we can say now based on our experience in this area.

First, the sheer number of state and local public safety agencies in this country demonstrate that the bulk of first responder equipment and personnel resides at the local level. Given the diversity of agencies, geography, equipment, and demographics, there will not be a "one size fits all" solution. Instead, future solutions will need to take this diversity into account and accommodate a system-of-systems approach.

Second, the solutions must be scalable. The public safety community can benefit from routine interoperable communications both in their normal day-to-day activities and during any larger incident or event. Future interoperability systems need to address both concerns. If future systems are designed only for large-scale events, then their effectiveness will be diminished because public safety officers will be unfamiliar with the systems and how to use them. Instead, the systems should be able to used regularly and be scale-up effortlessly for larger events.

Third, future systems need to address the physical and proprietary barriers to interoperability. This means that they must accommodate all spectrum bands and interoperate with systems from all manufacturers.

Fourth, the systems need to be inherently reliable and resilient, if not redundant.

Fifth, any technical approach that the government supports must represent mainstream technology. The public safety community will benefit most if future solutions use technologies where society as a whole drives the cost of innovation rather than public safety alone. Mainstream choices are those where innovation, competition, and open architecture flourish while any advancements remain compatible with older systems for some time.

The development of long-term solutions is an ongoing process in which NIJ's AGILE program and SAFECOM are working together. The two programs are involved in activities that will help identify these future solutions. One of these activities is the creation of a Statement of Requirements that will describe how public safety wants to communicate, not how they currently communicate. Portions of this document are currently being vetted by a group of public safety first responders. Once completed, the entire Statement of Requirements will undergo a final vetting by NPSTC.

Other activities include SAFECOM's recent release of a Request for Information to identify existing interoperable technologies and planned release of a Broad Area Announcement (BAA), soliciting for innovative pilot projects. Through AGILE, NIJ will provide technical expertise to assist with the review and assessment of submissions to SAFECOM. In March 2004, SAFECOM will sponsor a session at the International Symposium on Advanced Radio Technology titled, "The Identification of a Viable Public Safety Communications Architecture."

In December, NIJ plans to release an interoperability research and development solicitation seeking applications to fund projects involving enabling technologies, such as SDR

and VoIP. SAFECOM representatives will participate in NIJ's review of these proposals and will benefit from the technology developed and lessons learned.

Much work remains on identifying future solutions for a viable approach to long-term interoperable communications. No matter what technical approach is chosen, the result should be a set of interface standards that will enable legacy and future radio systems to interoperate in a system-of-systems approach. From the activities described above, we fully expect that the Department's AGILE program, in partnership with the SAFECOM program, will be able to take the steps necessary to identify the communications solutions that law enforcement will need in the future.

Today's hearing demonstrates that your subcommittees understand that interoperability is an issue that affects all of us. Through the AGILE program, the National Institute of Justice is working to improve public safety communication in way that can save lives and make all of America's communities safer.

This concludes my statement, and I will be happy to answer any questions.

Mr. SHAYS. Thank you, Dr. Morgan.

Mr. Muleta.

Mr. MULETA. Thank you.

Good morning, Mr. Chairman and members of the subcommittee.

Mr. SHAYS. I am going to have you pull the mic a little closer. We can hear you, but we would like to hear you better.

Mr. MULETA. I was going to say can you hear me now, but that would favor one carrier over another.

I want to start off by first recognizing Congressman Putnam. My early beginnings as an engineer was out in Brandon, FL, so I think we have something in common there.

Mr. SHAYS. Was that when he was in junior high school?

Mr. MULETA. I don't know. I don't know if he went to Brandon; he might have been Polk County.

But I also want to recognize the fact that interoperability is demonstrated to me every morning when I drive in from Arlington on the way to my office in Washington, when I drive through the Pentagon area on the way to the 14th Street Bridge. There you see the Virginia State Police, the Arlington County Police, the DOD folks all trying to work together to make sure that the Defense Department, the Pentagon is safe, and I think that is a demonstration of the kind of interoperability that needs to take place.

What my talk today will describe is how the FCC and my bureau in particular are facilitating interoperability and effective public safety communications.

Mr. SHAYS. You can move that mic about 2 inches back and we will be fine. No, I like hearing someone like I am hearing you, so thank you.

Mr. MULETA. All right.

I will also touch upon the three critical issues that drive interoperability and effective use of public safety spectrum. These are the need for local, State, and Federal planning coordination; the need for public safety systems to take advantage of the latest technology; and, three, the financial infrastructure to help address the coordination and technology adoption issues. Under the able leadership of Chairman Michael Powell, the Commission has systematically addressed and will continue to address these issues.

My dear colleague, Ed Thomas, will describe the issues related to public safety interference issues and the potential solution, so my focus will be on the activities of the Bureau to develop a network of effective public safety systems. We are doing that while being cognizant of the varying needs and interests of more than 40,000 different public safety entities in the country.

First of all, I do want to assure the members of the subcommittee that we place the highest priority on public safety issues, and these issues not include the public safety radio system, but also the integration of critical infrastructure industries and a seamless nationwide E–911 system into a national homeland security and safety system.

Our commitment is exemplified by the dedication and hard work of the over 90 people that we have working in our Public Safety and Private Wireless Division. These lawyers, engineers, and analysts process over 400,000 different license applications, transfers, and requests for special temporary authority, and they also deal

with the highly complicated legal and regulatory issues that are presented by public safety radio operations.

In addition, we work closely with other offices and Bureaus in the Commission, including the Homeland Security Policy Council, which was created under the direction and leadership of Chairman Powell. It is through this interdisciplinary council that we are able to coordinate our activities with other Federal, State, and local authorities in order to put in place measures that protect our country's telecommunications, broadcasts, and other communications, infrastructures, and facilities from adverse attacks.

In terms of planning and coordination in greater interoperability, the FCC has been active in promoting better coordination between different public safety entities. The FCC first explored a national and regional planning approach for public safety spectrum in the 1980's as an alternative to the traditional first come, first served licensing approach. It was during this process that service rules and technical standards were adopted to govern a dedicated 6 megahertz of public safety spectrum in the 800 megahertz band. Most importantly during this process, the Commission designated five channels nationwide for mutual aid cooperation and communication.

As part of the planning process, there were 55 regional planning committees, broken down along State lines, to develop regional plans tailored to the particular public safety communication needs of each region. This same regional planning process was also adopted and used as a model for the 700 megahertz public safety band plan. We chartered the Public Safety National Coordination Committee, the NCC, in 1999 to solicit input from the public safety community in further development of rules for the use of this technology. Its final recommendations were submitted to us this past summer and will lead to the development of service rules and regulation that will lead to greater interoperability in the 700 megahertz public safety band.

We are also excited about the growing potential for introducing technology that will lead to innovative public safety uses. For example, the recently adopted service rules for the 4.9 gigahertz band accommodate new applications for broadband mobile operations in the use of fixed hot spots.

We also continue to pursue a flexible licensing regime in the public safety arena and encourage optimal public safety communications and interoperability. For example, licensees in the 4.9 gigahertz band, public safety licensees, are permitted and encouraged to enter sharing agreements or strategic partnerships with both traditional public safety entities, Federal Government agencies, and non-public safety entities such as critical infrastructure industries, power and utility companies.

Two remaining challenges relate to funding and leveraging technology to the benefit of public safety. These issues are related, and we continue to have an open dialog with the public safety community and other interested stakeholders, including equipment manufacturers, critical infrastructure industries, and the commercial service providers. The creation of more public and private partnership is one potential solution to the funding and technology issue.

Better spectrum management is also a key issue to address these concerns.

The 800 megahertz interference proceeding is yet another example where the FCC must address the three challenges of planning and coordination, technology, and funding to solve the problem. In addressing the problem, I do want to assure you that we are conducting our examination of potential solutions with the following priorities in mind. One is to address the interference issues for public safety first and foremost. Second, we want to adapt a spectrum plan that provides certainty to all the licensees in the band. And, third, we want to treat all of the affected licensees equitably as we move to an effective solution.

In conclusion, I want to reaffirm that the FCC views as one of its highest responsibilities the public safety community. The Commission has been and will continue to be sensitive to the need of this community by making spectrum available for its use when necessary, by protecting it from interference, and by enabling new technologies to aid it in its mission.

Thank you again for your invitation to testify on this important and timely subject. Thank you.

[The prepared statement of Mr. Muleta follows:]

JOINT WRITTEN STATEMENT

Of

JOHN MULETA
Chief, Wireless Telecommunications Bureau
Federal Communications Commission

EDMOND THOMAS
Chief, Office of Engineering and Technology
Federal Communications Commission

Hearing

on

First Responder Interoperability: Can You Hear Me Now?

Joint Hearing Before the

Subcommittee on National Security, Emerging Threats and International Relations

Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census

Committee on Governmental Reform
United States House of Representatives

November 6, 2003
11:30 a.m.
2154 Rayburn House Office Building
Washington, D.C.

JOINT WRITTEN STATEMENT OF
JOHN MULETA AND EDMOND THOMAS
FEDERAL COMMUNICATIONS COMMISSION

Good morning, Chairmen Shays and Putnam, Ranking Members Kucinich and Clay and other Members of the House Government Reform Committee. Thank you for this opportunity to appear before you on behalf of the Federal Communications Commission ("FCC") to discuss the wide range of issues related to first responder communications interoperability and public safety spectrum use.

The Commission's work in this area is longstanding and central to the maintenance of America's public safety telecommunications network. Homeland security, in its many facets, is an unquestioned policy goal and one of the Commission's core strategic objectives. Under the leadership of Chairman Michael K. Powell, the Commission is coordinating internally and with other U.S. Government agencies to ensure that our nation's first responders have the unencumbered ability to communicate in times of local or national crises. The Commission's staff works together to ensure that homeland security will never be compromised.

The FCC is proud of its accomplishments in this area, but cognizant of the hard work ahead. What follows is an overall picture of the Commission's role regarding public safety spectrum. We will set forth the Commission's approach to public safety spectrum needs and discuss the steps taken to make spectrum available for public safety communications – including a review of all the bands allocated or designated for public safety use and interoperability. We also will provide a comprehensive outline of the spectrum planning processes that the Commission, working with various public safety representatives, has undertaken to promote

interoperable communications. In addition, we will address the challenges represented by interference to public safety systems, the various mitigation efforts that can be taken to eliminate harmful interference, and highlight possible new solutions to improve interoperability. It is worth noting though, that the Commission is only one stakeholder in the process, and regional planning and cooperation by local and state officials is tantamount to respond to the needs of our Nation's first responders.

The Commission's Structure and Processes

The Commission maintains a flexible organizational structure designed to meet the needs of first responders and the civilian population. Indeed, it was the tragedy of the Titanic and the inability to communicate clearly during that disaster that led to the formation of the Commission's predecessor agency and first highlighted emergency communications as a crucial policy objective. While the industry and the Commission have undergone significant changes over the last century, the FCC remains committed to confronting the challenges inherent in national emergencies.

Chairman Michael K. Powell recognized the importance of reforming the Commission and upgrading its equipment and staff even before the September 11, 2001 crisis. The Commission has undergone a significant reorganization in order to make the FCC, as an institution, more efficient, effective, and responsive. The Chairman developed and implemented a clear and substantive policy vision based on six strategic goals to maintain an emphasis on management, cohesive and efficient operations, and clear and timely decisions. He realigned the organization of the FCC consistent with the dynamic of the converging marketplace and initiated

staff revitalization to foster solid technical expertise. This program continues with ongoing restructuring in some bureaus and the hiring of more engineers and other technical experts.

The overall agency reform includes the ongoing implementation of the agency's inter-bureau Spectrum Policy Task Force Report. The Spectrum Policy Task Force is comprised of senior staff from several Commission Bureaus and Offices, including attorneys, engineers and economists, and assists the Commission in identifying and evaluating changes in spectrum policy that will increase the public benefits derived from the use of the radio spectrum.

In the area of public safety, the Commission functions in an integrated fashion to revitalize and allocate available resources and assign channels to entities in need of spectrum. The two most active sectors in this area are the Commission's Office of Engineering and Technology (OET) and the Wireless Telecommunications Bureau (WTB). Although these bureaus work directly with other agencies on spectrum issues, the Commission also maintains a Homeland Security Policy Council (HSPC) and the Office of Homeland Security to facilitate intergovernmental communications on homeland security issues. A more detailed description of these offices and their functions is available at Attachment A.

Making Spectrum Available for Public Safety

Public safety operations traditionally have consisted of two-way communications between a base and mobile station or between two mobile stations, and as such, have required the use of sufficient spectrum to function properly. The 30-50 MHz band was the earliest band allocated for public safety use. The propagation characteristics of this band permit longer distance transmissions and this is now commonly used for statewide public safety systems.. Over time, technology has advanced, enabling two-way communications at higher frequencies.

In addition, existing public safety bands have become more and more intensively used. As a result, the Commission has made several additional public safety spectrum allocations at increasingly higher and higher frequencies.

As the chart at Attachment B indicates, the Commission currently has designated throughout the country, for public safety use, approximately 97 MHz of spectrum from ten different bands. In addition, in 11 major urban areas, where the demand for public safety spectrum is the greatest, the Commission has authorized up to an additional 18 MHz of spectrum. For instance, in the Washington, D.C. metropolitan area, public safety systems are authorized to use an additional 12 MHz of spectrum on UHF TV channels 17 and 18. Also, in the New York and Los Angeles metropolitan areas, two locations that have some of the highest demand for public safety spectrum, an additional 18 MHz of spectrum is available.

Public safety entities also actively use spectrum-based services in other spectrum bands. For example, under the ultrawideband rules, ground penetrating radars and imaging systems enable public safety users to detect the location or movement of people behind or within walls or other structures, an important and potentially lifesaving tool. In addition, various frequencies are available from 2 to 25 MHz for emergency communications. Finally, the availability of Priority Access Service (PAS) on some commercial wireless networks gives certain emergency personnel greater ability to access commercial cellular and Personal Communications Service (PCS) systems in times of crisis. Also, many public safety entities use commercial wireless communications to supplement their other communications.

Spectrum Dedicated to Interoperability

The Commission's rules define *Interoperability* as an essential communications link within the public safety and public service wireless communications systems which permits units from two or more different entities to interact with one another and to exchange information according to a prescribed method in order to achieve predictable results. The Commission has designated certain channels in the public safety bands for this purpose. A public safety entity may use designated frequencies only if it uses equipment that permits intersystem interoperability. The frequencies that have these so-called "use designations" include 2.6 MHz of the 700 MHz band, 5 channels in the 800 MHz band, 5 channels in the 150 MHz band (VHF Band), and 4 channels in the 450 MHz band (UHF Band).

Starting on January 1, 2005, the Commission will require newly certified public safety mobile radio units to have the capacity to transmit and receive on the nationwide public safety interoperability calling channel in the UHF and VHF bands in which it is operating. Also, for the special case of certain inland coastal areas, known as VHF Public Coast areas (VPCs), the Commission has designated several additional channels in the VHF band to be used exclusively for interoperable communications.

Recent Public Safety Allocations

In the last few years, the Commission has made two allocations that illustrate the importance placed on ensuring that public safety entities have sufficient spectrum to carry out their critical missions. First, the Commission made an important allocation of spectrum for public safety use in the 700 MHz band that is being transitioned from TV broadcasting as part of the digital television (DTV) transition. In 1997, the Commission proposed, consistent with a

recommendation in a Final Report by its Public Safety Wireless Advisory Committee, to allocate 24 MHz of this reclaimed broadcast spectrum for public safety uses. Consistent with this proposal, Congress enacted the Balanced Budget Act of 1997, which specifically directed that 24 MHz of the 60 MHz of spectrum being reclaimed from Channels 60-69 be allocated for public safety purposes, with the other 36 MHz to be auctioned for commercial uses. At the end of that year, the Commission identified and allocated the new 24 MHz of public safety spectrum.

The Commission then moved to take steps toward enabling the new 700 MHz public safety spectrum to be effectively utilized. In doing so, it crafted special provisions both to address the continuing interoperability issues among various public safety systems and to provide flexibility to accommodate a wide variety of innovative uses. In particular, the Commission dedicated 2.6 MHz of this spectrum for interoperability purposes.

From the beginning, the Commission has recognized that the utility of this spectrum for public safety depended on taking actions, consistent with the current statutory scheme, to minimize, and ultimately clear, the broadcast use of this spectrum. For instance, during the digital television ("DTV") planning, the Commission minimized the use of channels 60-69. As a result, the new 700 MHz public safety spectrum on TV channels 63-64 and 68-69 is available now in many areas of the country.

Finally, the Commission has worked with Canadian authorities to clear the 700 MHz spectrum for use by public safety. We first addressed this problem in response to concerns raised by New York State's public safety community, but quickly expanded our efforts to address channel usage all along the U.S.-Canada border. In the period since September 11, 2001, the Canadians have re-evaluated their own public safety communications needs and decided to amend their DTV Table of Allocations to permit channels 63 and 68 to be used immediately for

public safety communications, instead of DTV. We are working to develop similar arrangements with Mexico for use of the 700 MHz public safety frequencies in the border areas with that country.

The Commission also recently has made available for public safety use 50 MHz of spectrum at 4.9 GHz, which promises to permit the use of new advanced wireless technologies by public safety users. Part of a transfer of Federal Government spectrum to private sector use, the 4940-4990 MHz band (4.9 GHz band) was originally proposed to be allocated to fixed and non-aeronautical mobile services and to be auctioned to commercial users, with no designation of the spectrum for public safety use. In response to requests from the public safety community for additional spectrum for broadband data communication, the Commission designated the 4.9 GHz band for public safety use in February 2002 and adopted service rules in April 2003.

The rules adopted for the 4.9 GHz band are intended to accommodate a variety of new broadband applications such as high-speed digital technologies and wireless local area networks. For example, before leaving the fire house, building plans and schematics could be almost instantly downloaded to a fire vehicle. A local area network could be set up at the scene so that this information could then be relayed to all public safety personnel on site. These rules also foster interoperability, by providing a regulatory framework in which traditional public safety entities can pursue strategic partnerships with others necessary for the completion of their mission.

Spectrum Planning to Promote Interoperable Communications

800 MHz Regional Planning

In 1986, the Commission designated six megahertz of spectrum in the 821-824/866-869 MHz bands for public safety use. In 1987, it adopted policies, service rules and technical standards to govern this spectrum. A public safety advisory group called the National Public Safety Planning Advisory Committee (NPSPAC) recommended these rules, which constitute a "National Plan" for public safety services. The National Plan was created to accomplish two goals: encourage efficient use of the spectrum, and increase interoperability among communications systems, which would enable local, state, and federal public safety agencies to better coordinate their activities. Most importantly, the Commission designated five channels nationwide for mutual aid communications which is today referred to as interoperability communications.

The regional planning committee approach to spectrum management replaced the traditional first-in-the-door approach to spectrum licensing and management. There were 55 Regional Planning Committees (RPCs) created to develop regional plans tailored to the particular communications needs of each region.

State geographical boundaries formed the basis of the regions, with membership comprised of police, fire, local government, forestry conservation, highway maintenance and emergency medical services. The RPCs elected chairpersons and established balanced membership with representation from multiple public safety entities within their regions. The Commission had approved all the initial regional plans by 1993. Still, the regional planning process continues today. There are periodic requests for regional plan modifications and

amendments to initial plans, which are placed on public notice. Once Commission consent is granted, the parties may file the corresponding applications.

700 MHz Regional Planning

In adopting its band plan for 700 MHz, the Commission divided the band for different purposes in terms of spectrum management. The majority was for general use and it will be managed by 700 MHz RPCs that are patterned after the 800 MHz regional planning structure and process. In addition to the 700 MHz general use spectrum, the Commission also designated about 10 percent of the total allocation, or 2.6 MHz of spectrum, for interoperability.

Regional planning allows for maximum flexibility of RPCs to meet state and local needs and encourage innovative use of the spectrum to accommodate new and as yet unanticipated developments in technology and equipment. To date, 44 regions have held initial meetings and elected a chairman, while 11 regions have held no meetings. Two regions, Region 5, Southern California, and Region 24, Missouri, have filed their 700 MHz Regional Plans. Both plans are under staff review.

State Interoperability

Given the central role that states provide in managing emergency communications, the Commission concluded that states are best suited for administering the interoperability spectrum and that state-level administration would promote safety of life and property through seamless, coordinated communications on the interoperability spectrum.

States were allowed until December 2001 to inform the Commission whether they would form a State Interoperability Executive Committee (SIEC) or use an existing state entity to

administer the interoperability spectrum. Thirty-eight states and the District of Columbia elected to administer their interoperability spectrum. For the fourteen who did not, the RPCs have been delegated the responsibility to administer this spectrum.

With respect to 700 MHz State licensing, the Commission gave each state the option to receive a statewide authorization and to apply for a single, geographic license for up to a total of 2.4 MHz for their needs. All states applied for and were granted state licenses for this spectrum. The geographic license gives states a new tool for managing and planning the radio communications needs of state agencies.

Public Safety National Coordination Committee

The Public Safety National Coordination Committee (NCC) operated as a Federal Advisory Committee from 1999 to 2003 and recommended technical and operational standards to assure interoperability in the 700 MHz public safety band. The over 300 members employed a consensus-based decision-making process to meet its charge. The NCC was guided by an eleven-member Steering Committee and used three subcommittees, each of them having several work groups to develop its recommendations, many of them highly technical. It submitted its final recommendations in July 2003.

The NCC developed recommendations on a technical standard for the narrowband voice and data channels to ensure that police, firefighters, EMS and other public safety officials using 700 MHz radios can communicate with one another instantly on common voice and data channels. The same channels are designated for interoperability use everywhere in the United States. The Commission adopted the narrowband voice standard and also a narrowband data standard in January 2001 as the NCC recommended.

The NCC also developed a recommendation for a wideband data standard and forwarded it to the Commission in July, 2003. This standard would give public safety agencies a common "pipeline," on 700 MHz wideband data interoperability channels, with which to implement such applications as sending mug shots and fingerprints to police vehicles, medical telemetry from EMS units to hospitals, blueprints of burning buildings to firefighters and video coverage of incidents to the incident commander. The NCC worked with the Telecommunications Industries Association – an accredited standards developer – to develop interoperability technical standards that are open and non-proprietary. The remaining recommendation of the NCC, including the wideband data standard, will be considered for rulemaking by the Commission in the future.

4.9 GHz Band

The Commission's service rules for the 4.9 GHz band adopted in May, 2003 are designed to promote a broad array of possible uses such as broadband mobile operations, fixed "hotspot" use, and temporary fixed links. Licenses for this spectrum will be granted to public safety entities based on a "jurisdictional" geographical licensing approach. This means that 4.9 GHz spectrum is licensed for shared use. Under this approach, 4.9 GHz licensees will be authorized to operate throughout those geographic areas over which they have jurisdiction and will be required to cooperate with all other 4.9 GHz licensees in use of the spectrum. In order to increase spectrum use and foster interoperability, licensees will be permitted to enter into sharing agreement or strategic partnerships with both traditional public safety entities, including Federal Government agencies, and non public safety entities, such as utilities and commercial entities.

Public Safety Interference

Although providing access to sufficient spectrum for public safety entities has been a significant step in enhancing first responder capabilities, harmful interference to public safety communications also is of significant concern to the Commission. First responders can be seriously compromised in their ability to carry out their life-saving responsibilities when they are unable to receive or transmit wireless communications. Accordingly, the Commission has taken an active role in protecting public safety communications from harmful interference.

Currently, the most critical public safety interference issues involve public safety communications in the 800 MHz band.[1] The Commission has placed its highest priority on working to alleviate these interference issues. During the past three years the Commission has been working actively with the affected parties to alleviate interference problems, and began a rulemaking proceeding in March of last year to consider this matter. To provide a sense of the technical complexities underlying these important interference issues, here is a brief description of the nature of the interference in this band, and then some of the possible solutions under active consideration.

Current 800 MHz Band Plan

A total of 36 MHz of spectrum is designated for a variety of spectrum users, including:

1. public safety users;
2. Nextel and Southern Link, Specialized Mobile Radio (SMR) providers who now provide commercial mobile radio services to the public; and
3. various traditional dispatch service providers, as well as private businesses, such as utilities, which use the spectrum to provide mobile wireless services for internal communications.

[1] 806-824 MHz and 851-869 MHz.

Just above this band is the spectrum assigned to the two cellular carriers. Because cellular licenses were not nationwide licenses, different carriers provide service in different locations. Verizon Wireless, Cingular Wireless, and AT&T Wireless are major carriers often providing service in part of this spectrum.

The current Commission band plan divides the 36 MHz of spectrum in the 800 MHz band into four parts. About a third of this spectrum consists of 250 interleaved channels of 25 kHz each, with specific channels being assigned to any of the various classes of 800 MHz licensees, including public safety. As mentioned above, 6 MHz is dedicated to the nationwide public safety NPSPAC channels. Another 10 MHz is now predominantly licensed on a geographic basis to Nextel, as SMR spectrum. The final 7.5 MHz is also largely licensed on a geographic overlay basis to Nextel as an SMR licensee, but there are incumbent site-based public safety, private internal, and commercial dispatch systems operating as well in that spectrum.

Network Architectures

Both commercial and public safety licensees originally utilized a network architecture under which each licensee deployed one, or relatively few, high antennas, and planned for coverage over a relatively large geographic area around each tower. Interference was avoided by locating towers using the same and adjacent frequencies sufficiently far apart as not to cause interference.

Subsequently, however, certain SMR licensees, most prominently Nextel, began providing service using a network architecture employing more numerous low-site antennas that place higher levels of energy on the ground. Such systems contemplate frequent handoffs

between different antennas on the same call as a user moves from one "cell site" to another. These two disparate architectures have raised different technical interference issues than existed before, although they are consistent with the Commission's rules. These issues are now the focus of the current Commission proceeding.

Interference Scenarios

With these new disparate network technologies operating in the 800 MHz band plan, interference to public safety systems can arise when a public safety officer is at a location where the signal from the cell site of one or more carriers is exceptionally strong and the signal from the public safety base station is relatively weak.

To oversimplify, two predominant interference types can occur. The first results from the presence of out-of-band emissions (OOBE) from one or more non-public safety operators in nearby frequencies. The second results from the "intermodulation" in the public safety receiver of two or more signals at other frequencies – with the intermodulation interfering with the desired public safety signal.

To protect against OOBE-type interference, the Commission limits the power level of emissions that a licensee may emit on frequencies outside their licensed frequencies. But OOBE interference can still occur. For instance, the design of an older public safety receiver may not prevent it from receiving signals on frequencies just outside its licensed frequency.

Intermodulation interference is more complicated. It occurs when the frequencies of strong interfering signals bear a certain mathematical relationship with the frequency which the public safety receiver is attempting to use at a particular location. In the current 800 MHz band plan, the mathematics of intermodulation means that the interfering signals may exclusively be

caused by Nextel signals or may be a combination of signals from Nextel and either or both of the two cellular carriers in the affected location.

Potential Interference Solutions

There are two general categories of solutions for harmful interference, neither of which are mutually exclusive: (1) Affected parties can make a number of technical changes to prevent and/or remedy instances of harmful interference as they design, deploy, and modify their systems; and (2) The current 800 MHz band plan can be modified, with a particular focus on eliminating the interleaved portion of the band. The current record finds advocates for both categories of solutions.

For instance, parties have suggested that the Commission adopt a more concrete standard for harmful interference in this band and require that interferers make all technical changes necessary to eliminate that harmful interference. As an example of possible technical changes, CMRS carriers can reduce the strength of their signals "on the street" in locations where the public safety signals are weak. They can do this using any of a variety of techniques -- such as reducing transmitter power, changing the orientation of their antennas, or deploying new antennas that reduce the downward energy.

As another example, improved public safety receivers could be deployed. For instance, Motorola has stated that it will be including in its 800 MHz public safety receivers by the end of the year a technical capability that will significantly reduce susceptibility to intermodulation interference. Similarly, public safety receivers with narrower "front ends" would be less susceptible to interference related to emissions from nearby bands.

Another tool that may be useful in mitigating interference is rebanding. Under the most widely discussed rebanding proposal presented in the current record, the parties contend that rebanding has several public interest benefits. First, with respect to interference, implementation of rebanding should minimize in the long term the likelihood of harmful interference to public safety systems in particular cases, and thus the burden of case-by-case troubleshooting by public safety systems and carriers. Second, it provides for an opportunity to designate additional spectrum for public safety use. Third, rebanding provides the Commission with an opportunity to realign the 800 MHz band in a manner which would better reflect current and near-term emerging technologies and sound spectrum management principles. According to these parties, realizing these benefits would not only promote interoperability and effective public safety communications, it would also lead to more effective and efficient utilization of the 800 MHz band.

Several competing proposals have been introduced by parties to the Commission's 800 MHz proceeding, including some with a novel means of interference abatement. Among them is the so-called Consensus Plan. Nextel, joined by a group of public safety and private radio organizations, filed this plan with the Commission in 2002. The so-called Consensus Parties have subsequently updated their proposal – filing a substantial Supplement last December and further modifications just this past August.

The Consensus Plan advocates significantly reducing 800 MHZ interference through rebanding and other measures. Nextel would pay up to $850 million to cover the costs of retuning and/or relocating public safety and private land mobile radio within the 800 MHz band. Nextel would exchange additional spectrum to provide more 700 and 800 MHz channels for public safety. Also, the plan would make additional 900 MHz spectrum available for private

land mobile radio. In addition, the Consensus Plan calls for Nextel to receive contiguous 800 MHz spectrum and an additional 10 MHz of spectrum in the 1.9 GHz band. The Consensus Plan envisions that 800 MHz band licensees would continue to employ a variety of interference mitigation strategies (many of which are technical solutions) before and after implementation of band reconfiguration.

Thus, overall, the record presents a variety of approaches for addressing public safety interference issues. There are diverse solutions with different associated benefits and costs. The Commission must weigh the costs and benefits associated with the different solutions carefully before making any final determinations on how best to deal with interference issues in this band. We are committed to working with all parties to analyze and resolve the public safety interference issues as quickly as possible. We are equally committed to taking full advantage of the thoughtful ideas, expert analysis, and collective expertise of all those involved. Only by doing so will we be able to craft a solution that provides public safety entities with a lasting and meaningful resolution.

Interoperability Challenges and Solutions

Creating an optimal environment for interoperability requires increased expenditures on the purchase and upgrade of infrastructure and the implementation of staff training programs on equipment use. Today there are a broad range of telecommunications systems, dependent upon the financial resources invested by the communities supporting the systems. There are state of the art systems such as in Pennsylvania, and at the other extreme, there are low band, VHF, one-site systems with very old radio equipment. Federal grants through the Department of Homeland Security and other state and local funding sources may alleviate some local funding

challenges to facilitating comprehensive and nationwide interoperability. Alternatively, communities may "partner" with entities such as utilities and commercial users to increase access to resource funding.

For its part, the Commission is actively pursuing the potential of new technologies to enhance interoperability and encourage network efficiency. One example of such new technologies is cognitive radios, which have the capability to change their power and/or frequency, sense their environment, know their location, and optimize their communication path. This technology holds tremendous promise in the areas of interoperability and interference rejection/avoidance for public safety applications. We believe that during an emergency these radios will have the capability to configure themselves for interoperable use and automatically adjust in real time to avoid interference. The Commission staff hosted a Cognitive Radio Technologies Workshop in May 2003, as a preparatory step to beginning a rulemaking proceeding to facilitate the development and deployment of this exciting technology.

Although funding and new technologies hold promise for enhancing interoperability, neither will be effective without further cooperation among, and training of public safety entities in order to improve interoperability. The issue of whether different public safety systems can interoperate at the local, regional, and state level largely is a planning issue -- the key elements of which are coordination and cooperation. The establishment of mutual-aid agreement and standard operating procedures among public safety agencies requires that agency leaders at the state and local levels work with one another. In addition, it is important to support the educational efforts that have been undertaken to address this situation through participation in conferences and meetings of state and local elected officials.

Conclusion

In conclusion, let us reaffirm that the Commission views its responsibilities in the public safety community as one of its highest priorities. The Commission has been and will continue to be sensitive to the needs of that community by making spectrum available for its use when necessary, by protecting it from interference, and by enabling new technologies to aid it in its mission. Thank you again for your invitation to testify on this important and timely subject.

ATTACHMENT A

Office of Engineering and Technology

The FCC's Office of Engineering and Technology periodically reviews the sufficiency of existing public safety spectrum allocations and, as appropriate, drafts relevant Commission rulemakings for additional allocations. The office also evaluates any potential for interference using state-of-the-art computer modeling and simulation techniques. OET's laboratory in Columbia, MD conducts empirical laboratory tests and field measurements of reported interference cases, working hand-in-hand with the Enforcement Bureau to resolve cases of actual interference. In addition, OET routinely assesses vulnerabilities in communications networks and equipment and makes recommendations for facilitating improvements to network security, reliability and integrity. OET also evaluates new technologies and makes recommendations to the Commission for rule changes which would enable their use to improve the capability of first responders. Finally, OET is the agency's principal point of contact with the National Telecommunications and Information Administration (NTIA) and in this role works with NTIA on spectrum issues that affect both non-federal and federal government spectrum users, including state, local and federal first responders.

Wireless Telecommunications Bureau

Within the Wireless Telecommunications Bureau, the Public Safety and Private Wireless Division ("PS&PWD") is responsible for the administration of rules and licensing for public safety radio services. In addition, PS&PWD manages a range of other private land mobile radio services.

PS&PWD is responsible for rulemaking and other legal matters, *e.g.* waivers to license requirements, determinations on petitions for reconsideration, and interpretations and guidance concerning licensing matters. PS&PWD also reviews and processes applications for public safety licenses. Most of these applications are filed via the Universal Licensing System (ULS), a web accessible, integrated database with an automated processing system designed to easily facilitate the FCC filings necessary for public safety communications systems. In the past year, WTB processed more than 529,000 public safety and other private and mobile applications, including applications for new licenses, license modifications and renewals, waivers, and requests for special temporary authority.

Homeland Security Policy Council and Office of Homeland Security

The FCC's Homeland Security Policy Council (HSPC), created in November 2001 and composed of senior managers of the Agency's policy bureaus and offices, and the Office of Homeland Security (OHS) assist the Commission in realizing the Homeland Security Action Plan. Among the directives of the Action Plan is to ensure that public safety, public health, and other emergency and defense personnel have effective communications services available to them as needed.

Equally as important, HSPC and OHS ensure coordination with other federal, state, and local entities that are involved with Homeland Security. For example, as a partner with the Department of Homeland Security, the FCC has promoted registration of states and localities in the Telecommunications Service Priority and the Wireless Priority Access Service programs. These programs provide wire line and wireless telephone dial tone to public safety entities on a priority basis during and following a disaster. HSPC members are also working with disabilities

rights organizations to identify and resolve communications issues that have an impact on that community during national emergencies.

In addition, HSPC and OHS work closely to support the Network Reliability and Interoperability Council (NRIC VI) and Media Security and Reliability Council (MSRC), two of the FCC's federal advisory committees. Through NRIC VI, communications industry leaders provide recommendations and best practices to the FCC focused on assuring optimal reliability and interoperability of wireless, wire line, satellite, paging, Internet and cable public communications networks and the rapid restoration of such services following a major disruption. MSRC does much the same with the goal of achieving optimal reliability, robustness and security of broadcast and multi-channel video programming distribution facilities. Public safety representatives are part of this effort since, during emergencies, TV and radio are sources of information for citizens.

Attachment B

SUMMARY OF SPECTRUM CURRENTLY AVAILABLE FOR PUBLIC SAFETY

FREQUENCY BAND	AMOUNT OF SPECTRUM
25-50 MHz (VHF Low Band)	6.3 MHz
150-174 MHz (VHF High Band)	3.6 MHz
220-222 MHz (220 MHz Band)	0.1 MHz
421-430 MHz*	1.175-3.3 MHz
450-470 MHz (UHF Band)	3.7 MHz
470-500 MHz**	6-18 MHz
764-776 MHz/ 794-806 MHz (700 MHz Band)	24 MHz
806-821 MHz/ 851-866 MHz (800 MHz band)	3.5 MHz
821-824 MHz/ 866-869 MHz (NPSPAC Band)	6 MHz
4940-4990 MHz (4.9 GHz Band)	50 MHz
TOTAL	97.2-115.2 MHz

*The 421-430 MHz band is available for use in the following urban areas: Detroit, MI; Cleveland, OH; and Buffalo, New York.

**The 470-500 MHz band is available for use in the following eleven urban areas: Boston, MA; Chicago, IL; Dallas/Fort Worth, TX; Houston, TX; Los Angeles, CA; Miami, FL; New York, New York/N. E. NJ; Philadelphia, PA; Pittsburgh, PA; San Francisco/Oakland, CA; and Washington, DC metropolitan area.

Mr. SHAYS. Thank you very much.

Mr. Thomas.

And then we will go to questions with Mr. Putnam first, and we are going to do 8 minute rounds of questions, and then we may have a second. We need to be done by 1.

Thank you.

Mr. Thomas.

Mr. THOMAS. Good morning, Mr. Chairman and members of the subcommittee. It is a great pleasure to appear before you to discuss the critical issues regarding public safety. Public safety has been one of the Commission's highest priorities for many years. Today I will be discussing the role of the Office of Engineering and Technology in ensuring that public safety and other first responders have the spectrum and technology resources necessary to meet their critical needs.

I serve as the Commission's Chief Engineer. Among other things, my office is responsible for spectrum allocation and technical analysis. Today I will be discussing public safety spectrum allocation and how the Commission is addressing certain recent interference concerns in the 800 megahertz band.

To put matters in perspective, the Commission has allocated 97 megahertz of spectrum to public safety in 10 different bands. Therefore, in a typical metropolitan area, there are over 1,000 potential channels available to public safety for voice communication. In some of the largest metropolitan areas there are even more, since the Commission has authorized up to an additional 18 megahertz in these areas.

In addition, in the last few years the Commission has taken further steps to allocate new spectrum for public safety use. The Commission recently made available 50 megahertz of spectrum at 4.9 gigahertz. The rules adopted for 4.9 band are intended to accommodate a variety of new broadband applications such as high speed data and video.

The Commission has also allocated 24 megahertz of spectrum in the portion of the 700 megahertz band that has been recovered as part of the digital TV transition. A band plan for this 24 megahertz has been developed in conjunction with the public safety community and, among other things, it sets aside significant amount of spectrum for interoperability and future uses.

Interoperability has been a critical issue for the Commission for many years. Frequencies have been set aside for interoperability at 150 megahertz, at 450 megahertz, at 700 megahertz, and at 800 megahertz. To ensure improved interoperability for public safety operations, as of January 1, 2005, the Commission will require newly certified public safety radios to operate on a nationwide safety interoperable calling channel in the band in which the radio operates.

Along with allocation issues, the Commission has also been actively addressing interference to public safety operations. Recently, the most significant interference issue has arisen in the 800 megahertz band. In March 2002, the Commission began the process of developing a public record for seeking comment as to what additional steps we should take to help resolve the interference problem. I think it is an understatement to say that the response has

been robust. Parties have engaged in extensive discussions of the proposals and have submitted numerous different plans to reduce interference. For example, last year Nextel joined a group of public safety and private radio organizations to submit a relocation plan that was called a consensus plan. Others joined together and filed an opposition to the plan.

Presently, the Commission staff is diligently analyzing the proposals before it. The public record is comprehensive, contradictory, and complex. We are committed to resolving this public safety interference problem as quickly as humanly possible.

On another front, the Commission is moving forward to enable and encourage development of new technologies that hold promise for public safety use. Ultra wideband technology is one example. The most relevant application of ultra wideband technology for public safety is imaging. For example, in hostage situations, through-the-wall imaging systems can be used to pinpoint the location and movement of persons within a building. Similarly, a ground penetrating radar system can be used to locate buried objects or underground faults.

The Commission is also actively pursuing the public safety potential of cognitive radio technology or software-defined radios, which holds tremendous promise in the area of interoperability and interference rejection or avoidance. For instance, during an emergency, these radios will have the capability to configure themselves for interoperable use and adjust automatically to avoid interference.

Mr. Chairman and Members, allow me to end as I have begun. The Commission views its responsibility in the public safety arena as one of its highest responsibilities. The Commission has been and will continue to be sensitive to the needs of that community by making spectrum available to it when necessary, by protecting it from interference, and by enabling new technologies to facilitate the completion of its mission.

Thank you for the opportunity of addressing the subcommittee.

Mr. SHAYS. Thank you very much.

The Chair will recognize Mr. Putnam for 8 minutes and all Members for 8 minutes. We will then go to Mr. Clay.

I want to just point out my biggest fear is I feel that when everyone is in charge, no one is in charge, and so, in the end, I am going to be very eager to know who is going to take ownership.

Mr. Putnam.

Mr. PUTNAM. Thank you, Mr. Chairman. You have given me a perfect lead-in. My committee's jurisdictional role here is mostly related to the fact that this is an E-Gov initiative, which is Ms. Bailey's bailiwick; SAFECOM is a homeland security initiative, which is Dr. Boyd's bailiwick; Dr. Morgan has presented the AGILE program through Justice; and then, of course, the underlying spectrum issues are FCC. So what or who is coordinating all of the key Federal stakeholders to make sure that we have one streamlined SAFECOM program and that we avoid the duplication of efforts that has been the frustration so eloquently presented by our first panel?

Well, I am not sure who should answer it. Who is in charge? Does Dr. Morgan report to Dr. Boyd, since Dr. Boyd runs the SAFECOM program?

Dr. MORGAN. Well, with respect to interoperability, it is the settled position of the National Institute of Justice that SAFECOM is the primary coordinator of all activities in that area, and the AGILE program, as a result, has worked very diligently to coordinate all of its activities with SAFECOM on a daily basis. When we do our planning and program review in December for the AGILE program, we are doing it jointly with SAFECOM so that everything that we are doing is vetted through that effort and everything is coordinated with that effort. And so we feel that we have a very unique role because of our history, our technical expertise within our center system, and our focus on law enforcement, but we also feel that it is very important to coordinate with SAFECOM as well.

Mr. PUTNAM. And have them play the lead in this area. So Dr. Boyd is the lead agency.

Dr. MORGAN. Yes.

Mr. PUTNAM. And AGILE reports to Dr. Boyd.

Dr. BOYD. There obviously is a formal legal structure that has to do with direct reporting. What I can tell you is that we cooperate to the extent that we talked about what we were going to say in the testimony and how we would relate those things. We participate actively in progress reviews within AGILE; we have participated in the development of those programs. This, in fact, extends across not just AGILE and SAFECOM, but well beyond that. So, for example, when the interoperability grants which were authorized by Congress in 2003 were awarded roughly $75 million in FEMA and $75 million in COPS—COPS, of course, in Justice and FEMA in DHS, we also worked actively with both of those agencies to develop the Common Grant Guidance which they then used as part of that solicitation. And we have worked directly with the Office of Domestic Preparedness, so that the SAFECOM guidance is incorporated in their program as well. To give you an idea of the level of coordination, AGILE was tasked with developing the common performance template they were going to use to collect the data, so we could see how well the FEMA and COPS grants were actually accomplishing interoperability, and we even participated again with the AGILE program in developing the peer review process that supported both the FEMA and the COPS selections.

We have created a Federal coordination council, in fact, which includes not just the funding partners, but also includes all of those other activities that are providing grants that touch on interoperability. In fact, we have had meetings already in the last couple of months and we will have more meetings in the next couple of months as we begin to work through these things.

Mr. PUTNAM. If I am a police chief working on interoperability issues, do I call Karen Evans at OMB, who is Director of E-Gov Initiatives; do I call Dr. Boyd with SAFECOM; do I call Dr. Morgan with AGILE; or do I call the FCC?

Dr. BOYD. If you call any of the three of us, it is going to wind up in my office, and we will coordinate the response back. In fact, we have a staff for that. As we tell chiefs right now, one of the quickest ways if you want an answer in a hurry is to just send a message to safecom@dhs.gov and we will respond, and then we will coordinate whether it is AGILE that needs to be involved in that

activity or we will advise them if we think they need to refer it to the FCC or others.

Mr. PUTNAM. So these marketing materials, what is on this? We just received this from AGILE.

Dr. MORGAN. As I alluded to in the testimony, AGILE has a very wide range of work that it has done I standards development and research and development, test and evaluation, such as the AC–1000 switch in Alexandria. What this CD contains is a very wide range of documents and publications that can be accessed by everyone from policymakers right down to the technical people who are trying to implement these illusions. And so this AGILE Resource CD is something that we give out broadly at public safety associations and to people who are calling to determine what best solutions fit into their local environment, and so on. So it is a very wide range of publications and knowledge, and I would say it captures the vast majority of the knowledge that has been gained through the AGILE program over the last decade.

Mr. PUTNAM. Well, let me ask what apparently is probably a delicate question. In creating the Department of Homeland Security, we ruffled a lot of features because we moved some serious agencies around. I mean, we dislocated Coast Guard out of Transportation, which was a huge deal; we moved Secret Service around; we did all these things. Is AGILE best located in the Department of Homeland Security, considering the overlapping role?

Dr. MORGAN. Well, first of all, I think that AGILE and SAFECOM have a very strong working relationship, and if it ain't broke, don't fix it is the first part of it.

Mr. PUTNAM. That is what people said before we passed the Homeland Security bill.

Dr. MORGAN. The other issue I would say is that law enforcement has some problems with respect to day-to-day communications that we don't want to get subsumed in the overall public safety environment. In this city every day, not every day, but this year in this city there will be over 300 murders. There is a criminal justice mission that is separate from the Homeland Security mission, and a criminal justice mission that is very serious and important in this country; and, honestly, the investments that are necessary in building technology for criminal justice are extremely important and oftentimes overlooked. NIJ is focused on local law enforcement, and I think we are working very well with SAFECOM.

Mr. PUTNAM. Ms. Evans, what is your role in this?

Ms. EVANS. As the Administrator for E-Government and IT, it is my role to ensure that, and facilitate the cooperation and the coordination that has been demonstrated today. Additionally, what is also important in my role is that investments that are in the Federal space that are providing this service are done wisely and that meet the goals. So it is the administration's viewpoint that SAFECOM is the umbrella program for the Federal Government, and that we are working to ensure that all the Federal Government investments in this space are working through the SAFECOM to ensure that the standards, once the standards are established and that the architecture and those types of issues are there, that all the Federal investments those requirements.

Mr. PUTNAM. Is there a plan somewhere that has short-and long-term milestones for SAFECOM's progress?

Ms. EVANS. Yes, sir, there is. And we are also in the process of reviewing the plan again to ensure that we are keeping to 10 percent of the performance and schedule and budget. And as we move through the fiscal year 2004 budget cycle, it is our intention at the end of this to ensure that there is great visibility into all of the projects, not just the SAFECOM project, but all E-Gov projects so that question will be answered and that information will be available.

Mr. PUTNAM. Mr. Chairman, am I out of time? Thank you.

Thank you very much. I thank the witnesses.

Mr. SHAYS. Thank you. I said 2 minutes, but it had been about a minute and 20 seconds. I am sorry.

At this time I recognize Mr. Clay. I asked Mr. Clay, now that the two of you are working instead of the two of us, if he had been a bad influence on you, and he said, I hope so.

Mr. Clay, you have the floor.

Mr. CLAY. Thank you, Mr. Chairman. And we work together well.

[The prepared statement of Hon. Wm. Lacy Clay follows:]

STATEMENT OF THE HONORABLE WM. LACY CLAY
AT THE JOINT HEARING ON
PUBLIC SAFETY INTEROPERABILITY

NOVEMBER 6, 2003

Thank you Mr. Chairman for calling this hearing. If it were not so dangerous to our public safety, I would find it somewhat amusing that there has been so much talk about getting first responders to talk to one another, and so little change. We are not much better off than we were 10 years ago. In fact, we do not even have a coherent plan for where we want to go.

Understanding the problem is not too difficult. At the federal level, there are too many cooks stirring the soup, and none of them have the interests of the first responders as a priority. At the local level we find the competition between police and fire departments for control, and communities who are loathe to share resources with the community next door.

The councilwoman from Maryland has an excellent idea for funding much of the cost of new equipment for the nearly 40,000 jurisdictions throughout the United States -- use the revenues from the spectrum auction. Unfortunately, that would require the Federal Communications Commission (FCC) to change its tune. As we learned from her testimony, the FCC seems to be a part of the problem and not a part of the solution.

Several of our witnesses will testify to the problems created by the lack of sufficient bandwidth for public safety, and the

interference problems caused by commercial traffic on adjacent bands. Again, these problems seem to point to the FCC for solutions, but the witnesses instead point to the possibility that planned future actions by the FCC will make matters worse not better.

What is lacking in this process is leadership. The SAFECOM project was designed to provide that leadership, but it too has a checkered past. It started out at the Department of Treasury and then was transferred to the Department of Homeland Security. As near as I can tell, the Department of Homeland Security is struggling to find its own direction. That is not a very good prescription for leadership.

This hearing will highlight the problems we face in making our system of first responders better capable of handling both day-to-day emergencies and disasters. Many of the problems are the same whether it be closing the Woodrow Wilson Bridge because of a suicide attempt, or responding to Hurricane Isabel. It is my hope that this hearing will spur greater commitment in the Administration for solving some of these problems.

Again, thank you Mr. Chairman for calling this hearing, and I look forward to the testimony from the witnesses.

Mr. CLAY. I guess this is directed to the FCC witnesses. Councilwoman Praisner has suggested that the money from the spectrum auctions be used to support local first responders. This is a two-part question. First, please tell me where the money from past auctions has gone and, second, what do you think of the councilwoman's proposal? Either one, Mr. Thomas or Mr. Muleta can attempt to answer that.

Mr. MULETA. Thank you. The first question is where has auctions money gone? The auctions are designed to assign licenses between mutually exclusive licensees, and the moneys paid to that go directly to the Treasury. So that is one answer.

Your second question is what we think about the proposal. Generally, we defer to the legislatures on their initiatives. You know, that is something that is sort of in the purview of Congress as to whether that is an appropriate solution for the funding issues. I do recognize there are funding issues for first responders, and it is a very complex problem that needs to be tackled. There are over 40,000 public safety systems nationwide, and coordinating the funding structure for all of them and just the communication among all of them on the coordination issue is an important aspect of this. Thank you.

Mr. CLAY. Has the FCC weighed in in any way on this proposal that the councilwoman has offered up?

Mr. MULETA. My general understanding is that we do not comment on legislative initiatives; that is not under our purview.

Mr. CLAY. OK, thank you, Mr. Muleta.

Let me ask Dr. Boyd what requirements is the Department of Homeland Security putting on grants to first responders, and do you require that governments develop plans for interoperability?

Dr. BOYD. I think there are two answers to that. The first one is that in this last year, as we developed the guidance, we, in some cases, shoehorned the guidance in what the existing legislation said because every program wasn't driven under exactly the same set of rules, so we had to make some adjustments for that. But, in fact, we have worked with what is called the Consortium for the Improvement of Public Safety Communications, which is an organization made up of all of the major public safety organizations: the International Association of Fire Chiefs, Chiefs of Police, Major City Chiefs, Major City Sheriffs, the Association of Public Safety Communications Officers. Working with them, we developed the Common Grant Guidance, which then became part of the criteria that was used both in asking that they complete the applications in a way that addressed that guidance and then was used as part of the criteria in deciding how they were going to be selected, and that included a number of things. Where appropriate, for example, it strongly encouraged the use of P–25. P–25, as you know, is a standard which addresses digital trunk radio systems. And in each instance it looked largely for cross-jurisdictional, cross-disciplinary kinds of partnerships that addressed specifically the interoperability problem.

Mr. CLAY. Thank you for that response.

And tell me which agency is responsible for communicating with the local officials. Whose responsibility is that?

Dr. BOYD. Obviously, we would hope that local agencies would have access to any agency that they needed help from. Within the interoperability community we have been very proactive in going out and creating a structure that doesn't just allow occasional communication when they want to talk to us but, in fact, fosters an ongoing dialog. And so we have both an executive committee and an advisory committee structure which is built around the public safety community and around public officials so that, for example, as you heard in the earlier panel in your earlier hearing, Marilyn Praisner, Marilyn Ward and others are part of the SAFECOM system and, in fact, we meet with them. Eventually we will meet with them quarterly; right now we are meeting about every 4 to 6 weeks, as we put the foundations in place to do the things we think we need to.

Mr. CLAY. OK. Will SAFECOM be a one-stop shopping place for local governments who are trying to solve problems of interoperability?

Dr. BOYD. That is in fact the focus, that we would be not necessarily the sole place that would do that. AGILE is an R&D activity; we would anticipate that COPS and others would do that. But what we do see SAFECOM's role as is a place that you can go to in a one-stop basis and we will make the connections, so that instead of the local agency having to know that they need to talk to the COPS Office or to ODP to get the kind of training and technical assistance they need, they can come to SAFECOM and we will link them with the right folks.

Mr. CLAY. OK, any other panelists want to contribute? Ms. Evans.

Ms. EVANS. The one thing that I would like to point out is on the 24 E-Gov initiatives there is another initiative. Although we talk about them separate, they are going forward to ensure that there is coordination among those. And, of course, there is one which is grants.gov. And so the opportunities that you are talking about that are related to grants and how the grants go forward, there are opportunities there that we, as the administration, ensure that those opportunities then are coordinated between these initiatives to ensure that if they went to grants.gov to find out what opportunities were available to them, they would also then, if they were specifically interested in interoperability wireless types of opportunities, that would then be linked to the SAFECOM project.

Mr. CLAY. All right. Well, I thank the panel for their answers.

And in the interest of time, Mr. Chairman, I will yield back the balance of mine.

Mr. SHAYS. I thank the gentleman.

At this time we will recognize Mr. Schrock for 8 minutes.

Mr. SCHROCK. Thank you, Mr. Chairman. Before we start, I notice the members of the first panel are here, and I am wondering if you all have copies of that.

Mr. SHAYS. We will note for the record nodding of heads.

Mr. SCHROCK. Appropriate nodding.

I am sorry you guys weren't here for the first panel, but some of the testimony they had was amazing, especially some of the comments that were made by Congresswoman Jane Harman from California about this issue as it related to the California fires that, un-

fortunately, they are still engaged in. And she said if they had some of these systems in place, firefighters in California could have had real-time tracking maps to show progress of the fires, locations of other firefighters, critical infrastructures, blueprint layouts, etc.

And then probably the most compelling statement of all the testimony came from Marilyn Ward, who said in here interoperability has been brought to the forefront by disasters such as the Air Florida plane crash here in D.C. on the 14th Street Bridge. I don't know how many of you remember that. That was 21 years ago. Twenty-one years ago, and we are still discussing this subject. So clearly something has to be done.

Let me followup on something that I am not sure I got a complete answer to what Mr. Putnam was asking and I gather, Dr. Boyd, you have taken possession of responsibility, that is the way I figured it, so I guess I am going to aim this at you. Who has the sole responsibility for creating and facilitating these standards on a Federal-to-Federal basis, Federal-to-Federal interoperability, Federal-to-State, State-to-local, and regional? I am not sure. Maybe I was fiddling with my papers and didn't hear you answer that, but who has that responsibility?

Dr. BOYD. I don't think you missed it; I am not sure that we addressed that specifically. But, in fact, standards is a key component of what we are trying to do in SAFECOM, and it is standards at all of the levels. And, in fact, the instrument that we are using to help do that is the Office of Law Enforcement Standards of the National Institute of Standards and Technology, and that has been a partnership that has existed for a long time that started, in fact, before even I was in the Office of Science and Technology, and that entails working at all of the levels together.

We don't believe that there is a separate set of Federal interoperability standards and a separate set of State standards and a separate set of local standards; we think they need to be a common set of standards.

Mr. SCHROCK. I agree.

Dr. BOYD. And so the approach that we are using working with the National Institute of Standards and Technology involves a number of pieces. One of the first pieces, and it has been an interesting challenge, is who are all the players in this community. So some months ago, in May or June, as I recall, we asked the National Institute of Standards and Technology to convene a summit to invite in all of the Federal and national organizations that had some role in interoperability so that we could create what amounted to a catalog of all the players so we could figure out who ought to be involved with us in doing this and who ought to be involved in the standards process. That resulted in that catalog. In fact, there is a report to that effect and it is on a Web site.

Mr. SCHROCK. Who should it be?

Dr. BOYD. I am sorry?

Mr. SCHROCK. Who should that person be? For instance, on our recent panel we just had Ms. Valicenti. She is the head of the National Chief Information Officers, but she also runs the Kentucky one. Is it somebody like Mrs. Valicenti that should be doing this? Should it be one person at the State level, one State person for each of the States doing this?

Dr. BOYD. Clearly she is one of the people that we need to have involved in this, and, in fact, each of the States has its own structure and we work with whatever that State structure is. To be very frank, in order to make interoperability work at any level, what is most essential to begin with, whether it is at a county level or State level at the Federal level, is the creation of a governance structure that gives everybody in it at every level a stake in playing a role; and they have to feel credibly that they are at the table, that they have a role, that they are not just there, that they actually are helping to steer it and helping to shape it.

Mr. SCHROCK. Now, are they at the table?

Dr. BOYD. They are in SAFECOM.

Mr. SCHROCK. They are, OK.

Dr. BOYD. Yes, sir.

Mr. SCHROCK. All right, that is good.

You threw me off there, I was thinking of something else. Let me think here a minute.

Does the DHS and SAFECOM have the overall lead responsibility for coordinating Federal efforts to assist State and local governments, address barriers to interoperability? In the area where I live, I represent Virginia Beach and Norfolk. We just had a fairly bad hurricane come through there, and because of what we have done over the last couple of years, by proving moneys so all the localities have the same kind of equipment, you would be amazed. I rode with the police for 24 hours; they could talk to anybody in the area. But that is just our area; that isn't even Richmond or northern Virginia or the State.

I just wonder does DHS have the authority they need to make all this happen.

Dr. BOYD. When we began to develop the SAFECOM strategy, and we actually have five components of it, one of those critical components was identifying what the barriers are, and we actually called it that, said the barriers; what creates the problem. And in that list there are more things that are both human and cultural and policy than there are that are technical. To be very frank, the technologies that could make this happen exist but have not been largely employed, have not been put into place in most cases.

Mr. SCHROCK. Why?

Dr. BOYD. For many of the same reason that BORTAC, which we began actually back in 1993, took 2 years to get people to agree on what the protocols would be, on what the language would be, on who would control the decision on who you talk to. When you can actually develop a regional system like the one you just spoke of or what is happening under the Capital Wireless Integrated Network, what happened in SAFECOM or under BORTAC in San Diego, then you begin, I think, to begin the kind of movement that we eventually have to spread across the country.

I am not going to try to tell you that we have been successful in all the regions yet in communicating that piece of it, but that is a critical part, I think, of the national leadership, is to help local activities and demonstrate by taking examples like the Virginia Beach example, like some of the examples in Chicago, in South Dakota and other places and say, look, here are places where it not only worked, it paid huge dividends for those agencies who were in-

volved, and you didn't lose control, you didn't lose the ability to communicate the way you needed to.

Mr. SCHROCK. Do you think it is local politics that is getting in the way of some of this? Everybody has their own way of doing things and change is hard for people to accept, or what?

Dr. BOYD. I think I would be inclined to agree, that human nature is always going to be an element of this.

Dr. MORGAN. It is a natural outgrowth of the Federal system. I mean, we have thousands and thousands of independent public safety agencies out there because that is the way the founding fathers established the Constitution in their wisdom and, as a result, it is not necessarily a problem that the Federal Government can easily come in and say, all right, here is the solution and everybody adopt it. That wouldn't be appropriate. The best thing to do is to give them standards they can operate to, have the money that is put out from the Federal Government adhere to those standards, and provide technical assistance so that they will be able to implement systems.

Mr. SCHROCK. When I was in the State senate I thought, if the Federal Government told us to do anything, mind your own business, we're meddling, you know, frankly. And I was always one to say that people at the local level know how to handle their business better. But I think when you are dealing with an issue like this and we are dealing with terror, there has to be a basic framework from which everybody works; and I think we talked about that in the last panel. And unless we have that, you know, unless people are able to agree to that, we are never going to come up with a solution.

My gosh, is my 8 minutes up already?

Mr. SHAYS. Keep going.

Mr. SCHROCK. OK.

I want to ask Ms. Evans something. In fact, Ms. Evans, you are new in your current job, aren't you? I met with her on another issue the other day and enjoyed that, and I was surprised to see her here. What has the OMB done to promote better management of public safety spectrum issues in Federal departments, and do you all have the money available to do this effectively?

Ms. EVANS. Currently what OMB is doing, what the administration is doing is really working through the SAFECOM initiative, and the SAFECOM initiative is our umbrella program to ensure that the Federal resources in this area are directed to support the overall need of what we have been talking about and to ensure that partnership occurs.

Additionally, dealing with the spectrum issue, the administration has launched an initiative which is underway under the leadership of the Department of Commerce that is looking at the spectrum issue overall. That task force work is ongoing and Commerce is the lead on that to address some of the other issues that we are talking about as far as spectrum and spectrum usage and spectrum management.

Mr. SCHROCK. Are all the other agencies as engaged as Commerce, for instance, and do they have the funding to do this as well?

Ms. EVANS. All the agencies are engaged in this, this task force that is going forward that is supposed to provide a recommendation to the President of how we can move forward to address the spectrum issue. That report and that task force is ongoing, so as that evolves we would be glad to come back to the committee and tell you how that work is going on.

As far as the funding issue, we continuously look at that, and as we are going through the 2005 cycle, we are addressing and looking at those issues to ensure that as we move forward, projects such as SAFECOM do have the funding that they need in order to move forward to achieve the results.

Mr. SCHROCK. What is the next step to get this done? What do we need to do to get this done? And if it means we in Congress have to do something to step up to the plate and do it, I think we need to do it, and the quicker the better, because the folks who appeared before you have been here before and I think they are frustrated that not much is happening, and it looks to me like the problems that exist probably exist right here on Capitol Hill. We have to try to help resolve this. And I understand every time we pass a bill or do anything, more people's rights are taken away, but we are in a war right now, and I certainly don't want it to come to our homeland anymore. What is the next step? What do you think we need to do to get this done and get it done quickly?

I am asking all of you that.

Dr. BOYD. In SAFECOM, in fact, we have identified a list of things that we think we need to do, and, in fact, 2 or 3 weeks ago we brought that before another joint committee, in fact, I believe the chairman was at that session, and in it we pointed out that one of the critical things we needed was a governance structure that means that everybody that actually plays has a stake in it, has a role, and has a voice, so that it is both credible and it begins to get at those human issues you raised earlier.

The second one is the development for the first time of a genuine Statement of Requirements. What exactly do we need in interoperability; what level of interoperability, for what purpose, and what ought to be the rules that surround it.

Mr. SCHROCK. Who is going to create those rules?

Dr. BOYD. We are doing that right now.

Mr. SCHROCK. So you have ownership of that.

Dr. BOYD. That is correct. In fact, this afternoon I will be in reviewing the draft Statement of Requirements.

Mr. SCHROCK. Oh, good.

Dr. BOYD. The third thing we then need is the development of common guidance, grant guidance, which we have done, we are going to continue to refine that, out of which, with the Statement of Requirements and the guidance, we then hope to come up with a suite of standards. Now, these aren't necessarily going to be all new standards; there are standards, in fact, that are useful in a variety of areas that we will want to adopt. What we want to do is create a package of standards, and then create standards where holes exist, is what we call a standards gap analysis, and then use those standards both to help guide industry in what they ought to be producing for us and to help guide State and local activities, and even Federal activities, when they go to buy the equipment.

And then the last piece, the last crucial piece that we think needs to be applied here is some serious technical assistance. As you are well aware, most local jurisdictions don't have scientists or engineers or technicians as part of their public safety staff, and we need to provide them an objective capability through the system to do that, and so activities are being put together by the Office of Domestic Preparedness, by the AGILE program and the center system, and in some of the holes by SAFECOM so that we can begin to provide that objective assistance and they don't have to depend solely on vendors for the information, but can get broad, disinterested advice.

Mr. SCHROCK. I agree with everything you said. I just hope we can keep the standards and the rules and the regulations and the process simple so that the localities will be able to implement it easily and that there is the least amount of man-hours possible and the least amount of cost, because cost is everything right now at the localities, they are all screaming about it, they sure are in the district I represent, and I think the sooner we get this done the better.

I thank you all for coming here.

And I have no further questions, Mr. Chairman. Oh yes I do.

Mr. Thomas, you said something about 1,000 channels in some metro areas, and it just went right over my head, but the number kind of baffled me. Help me understand that.

Mr. THOMAS. Well, what I mean by that, Congressman, is the Commission has allocated an aggregate 97 megahertz of spectrum across 10 bands. They are available in almost all metropolitan areas.

Mr. SCHROCK. Oh, I see.

Mr. THOMAS. OK? If you just translate those to a number of voice channels that is equivalent to, that is roughly, conservatively speaking, it is about 1,000.

Mr. SCHROCK. OK, I see. You said something else, through-the-wall detection, and that is of interest to me because I represent the Port of Hampton Roads and, really, port security is my No. 1 issue right now, because I worry about those container ships with 3,000 containers coming in there and I think what is on there, what little device is in the corner of one of those things that when it gets to a certain grid behind the carrier person, it blows up, takes out our Navy and takes out our port, and I worry about that all the time. Every time I cross that bridge I see it.

Help me understand that technology.

Mr. THOMAS. Well, there is a technology called ultra wideband technology.

Mr. SCHROCK. What is it?

Mr. THOMAS. Ultra wideband technology. Sometimes it is referred to as UWB. It is very, very broadband, of the order of 4 or 5 gigahertz wide, but very, very low power, almost at the noise level. It has the capability of penetrating walls, and there are technologies available or devices available today.

Mr. SCHROCK. All kinds of walls; steel, concrete?

Mr. THOMAS. Well, I mean, there are certain walls that render it less effective than others, but the answer to your question generally is yes. It is used by special ops in the military and S.W.A.T.

teams, and basically what you can do is you put a device up against the wall and you get a radar picture of the movement inside of the wall, so you can keep track of individuals; it is used for hostage resolution issues, that kind of thing.

Mr. SCHROCK. OK, now I know what it is. Special operations forces have shown me that in Virginia.

Mr. THOMAS. And it is used by S.W.A.T. teams as well in the local areas as well.

Dr. MORGAN. Congressman, if I may, I also would recommend to you two other sets of experience with respect to technology for security of ports. The first, Project Seahawk out of Charleston, Charleston is a very large port, as you know, as well, is being run out of our southeast center and is applying technologies to the security of the Charleston port, as well as providing interoperability solutions in the Charleston area with law enforcement and public safety.

The other, I think, most extraordinary effort in terms of security of ports in this country is being run by the Port Authority of New York and New Jersey. There is a man up there by the name of John Pachowski who is doing amazing work in protecting the ports associated with New York and has put in the best technology that I have seen, and I think that we would be happy to put the folks in Newport News-Hampton Roads in touch with him and the other people who are supporting his efforts.

Mr. SCHROCK. Put me in touch with him. That would be great.

Dr. MORGAN. Yes.

Mr. SCHROCK. That would be great. Thank you very much. That used to be a Navy base; now it is a commercial port in Charleston, isn't it?

Dr. MORGAN. Yes.

Mr. SHAYS. I thank the gentleman.

It is my intention originally to be out at 1. I think we can go to probably 10 after, and then we will need to go for the 1:30 committee meeting we are having here.

It is also my intention to ask some questions. I think Mr. Janklow may come back, and I also want the professional staff to ask a few.

As I think of this hearing, first, the Government Reform Committee looks at programs. We look at programs for waste, abuse, and fraud. We try to make Government work better; we don't appropriate, we don't legislate except in some areas, and we try to get those committees of cognizance to legislate, and we do a darned successful job, and we do a pretty successful job getting, I think, the executive branch to sometimes revisit its rules and regulations and performance. So in this hearing we are talking about the ability to communicate within communities local, regional, State, and the ability to communicate among communities local, regional, and State as well, and we want to know how these laws are doing, how the regulations are doing, and how the administration is doing.

When I look at this issue and I see what SAFECOM is having to do with those organizations, some of those organizations represent some big, complex groups such as, for instance, the Governors organization, for one. As one of my staff members described

it, it is like herding cats with a squirt gun. So that almost seems hopeless, so I will reject his description.

But what I want to know, first, with the megahertz issue, the TV stations are basically supposed to get out of the 700 megahertz by 2006, is that correct? That is the end, right? I mean, it would be nice if they did it sooner.

Mr. THOMAS. Unfortunately, Congressman, that is not the end. That is the objective, but there is another hook in the law, as I understand it; and I am not a lawyer.

Mr. SHAYS. Every time someone says they are not a lawyer, they are giving themselves a compliment.

Mr. THOMAS. I am not going to touch that one with a 10 foot pole.

But also what is required is that within a market that 85 percent of the receivers be equipped to receive digital TV.

Mr. SHAYS. So the reality is, let us cut to the short, 2006 is almost meaningless.

Mr. THOMAS. It is highly unlikely.

Mr. SHAYS. OK. So that requires a legal change, a law to change that. That is not a regulation, that is a law, correct?

Mr. THOMAS. That is correct. But there is a consequence, and you should be aware of it, and that is the following: the way the process is set up is that basically a broadcaster presently has an analog channel. He is going to be moved somewhere in the spectrum to get a digital channel. When the channel is up and running, and when the market, and that market area is 85 percent or better digital, he loses the analog channel. The problem is if you speed it up, what occurs is that broadcaster could have no market. He could have a digital transmitter operating with no receivers in the market, and then there is a consequential question.

Mr. SHAYS. Just tell me the bottom line, all right? What is the bottom line?

Mr. THOMAS. The bottom line is, very simply, broadcasters have to be able to earn their living. If they have no market, they have no advertising. And it is just a caution, that is all I am giving you here.

Mr. SHAYS. So the solution is what?

Mr. THOMAS. Well, the solution is not an easy one, but one of the things we have done at the Commission, for instance, is when we did our digital planning we kept Channel 63, 64, 68, and 69 mostly vacant for interoperability. That is pretty much available in many spots in the United States today. The second thing is we did make available, as I said, the 50 megahertz at 4.9. The problem is, in the interoperability space, is that the entrenched receivers don't have that capability, so in order to get to interoperability there at least has to be some money provided someplace to upgrade the equipment. And they could also use part of the 700 band as well as other places, 150, 450 and the like.

Mr. SHAYS. The FCC spectrum task force report, this was issued, I guess, in November 2002. One recommended objective was to define and set standards of interference. Why is it so hard to come to an agreement on definition of interference? And when does the FCC hope to quantify acceptable levels of interference in the safety band area?

Mr. THOMAS. You are talking about at 800 megahertz, Congressman?

Mr. SHAYS. Yes.

Mr. THOMAS. All I can tell you is that is about the highest priority we have right now at the Commission. What makes it difficult is that interference is not a simple concept, it has several parameters that you have to juggle. One thing is if the public safety transmitter were at higher power, the effect of interference from other systems would be mitigated. So the first question is to what level do you protect public safety. The further you get away from the transmitter, the more susceptible it is to interference. So what diameter around the transmitter do you protect, that is the first issue.

The second issue is when you provide protection for interference, you basically move costs. If you make that diameter small, the public safety community incurs costs. If you make that diameter large, the adjacent community, those who are adjacent to it, incur cost. And the question is what is the appropriate public interest decision, and we are in the process of analyzing this right now.

Mr. SHAYS. OK, how long, how long, how long, how long? How long is it going to take?

Mr. THOMAS. Let us put it this way. I can't commit the Commission because, obviously, that is a matter of vote, but I think it is imminent. And when I say that, several months.

Mr. SHAYS. Well, based on the FCC, several months would be imminent, with all due respect.

You know, I have questions, but I want Mr. Janklow to ask his, so I am going to give him his 8 minutes.

Mr. JANKLOW. I will try and be brief, Mr. Chairman. Thank you.

Mr. SHAYS. You ask the questions you need to ask.

Mr. JANKLOW. I apologize for having left, but I had my weekly press conference I had to do back home with the folks on the telephone.

But you, Mr. Muleta, and you, Mr. Thomas, on behalf of the people of my State I would like to thank you. The FCC has moved mountains to assist us to getting transferred 150 frequencies to put this State-wide trunk system together that we put together, and you and your team of people have really done a phenomenal job. As a matter of fact, in order to get 150 frequencies, we went out in the public spectrum and bought them, and have had to have them transferred, bought them in other States, neighboring States, and used a little bit of subterfuge with some of the auctions working through people in Texas, because we weren't a qualified bidder in time, so we had to find a qualified bidder to get ourselves frequencies.

We need to fix by legislation these problems that you are being asked about, don't you agree? Don't you gentlemen agree? You can just say yes or no.

Mr. MULETA. Well, I think in general any issues, you know, where we have to sort of balance interest, having the legislators participate brings a greater focus on it.

Mr. JANKLOW. Let me give you an example briefly. I can remember during the invasion of Grenada. Afterwards, there was a major in the 101st Airborne Division that received the bronze star. What

he earned the bronze star for was he was trying to call in an air strike on a building, and he, in the Army, couldn't reach the Air Force airplanes. So he went to a pay telephone, used his AT&T credit card, called the 82nd Airborne Division headquarters in North Carolina, they patched him into the Pentagon, which patched him into a communications system, which patched him into the Air Force airplanes.

Mr. SHAYS. I am going to interrupt the gentleman. We know the system is bad. We just need to get some answers right now.

Mr. JANKLOW. But the military fixed it.

Now, the chairman asked you how long is it going to take to fix it. Would it be fixed faster if legislation was passed to set out the standards of getting this done? You are shaking your head yes, Dr. Boyd.

Mr. THOMAS. I would say no, and for a very simple reason. You have to know how to fix it to pass the legislation to do it, Congressman.

Mr. JANKLOW. And can you tell us what it is so we can pass the legislation?

Mr. THOMAS. Well, I wish I can. And that is the reason this is taking that long. This is an extremely complex issue, and it is not easy.

Mr. JANKLOW. So what you are telling me is, sir, if I understand you, we are doing the best we can do, and let us just hang in there and keep plugging forward.

Mr. THOMAS. No, I am not saying that, Congressman. What I am saying is it is an extremely complex, technical problem.

Mr. JANKLOW. Excuse me.

Dr. Boyd, you were shaking your head yes. Do you think we need legislation?

Dr. BOYD. Obviously, this is an issue that I think Congress is going to have to resolve at some point. I don't think we are in a position to challenge the technical details. I will tell you that the public safety community is very, very anxious to be able to occupy that spectrum.

Mr. JANKLOW. You have various Federal agencies that you are involved with in SAFECOM. Is the Agriculture Department part of this? Is the Interior Department part of it?

Dr. BOYD. Yes, they are.

Mr. JANKLOW. So, then, when the Ag Department can't use any radios except the 150 band for fires, no matter where they go, that is part of the SAFECOM plan? That is acceptable to SAFECOM? And you continue to allow them to be funded that way?

Dr. BOYD. Let me explain what SAFECOM is trying to do with this. The answer to that is that because there are 10 bands currently existing, and because there are very large investments in State and local agencies in these things, we know that we can't scrap that investment; it is just too much, it is too expensive. The local folks can't afford to undo those things. So what we are trying to do in SAFECOM is to find what is the best way for us to make those things work together in the near and probably intermediate term as we migrate toward what we hope is a genuine interoperability solution. And I will tell you that the public safety community sees 700 megahertz as part of that longer term approach.

Mr. JANKLOW. OK, but 700 won't work everyplace.

Dr. BOYD. Correct.

Mr. JANKLOW. There are places, remote areas of America, most rural States can't put up enough towers to accommodate 700, so they have to get in the lower frequencies.

Mr. SHAYS. I am going to have to interrupt.

Dr. BOYD. We have been very careful to make clear, when we talk about this, we are not talking about public safety giving up any of its existing spectrum. There are different characteristics in different bands.

Mr. JANKLOW. Mr. Chairman, I understand. We will quit.

Mr. SHAYS. Thank you very much.

Let me just say that it is a little frustrating for all of us at the moment, because I think we could go on a good bit longer. This is a hearing about spectrums and standards, and it seems to me standards should be driving the issues of spectrum, and the problem, I think, is we have not really come to grips with the whole issue of standards; what do people need, where do they need it, why do they need it. And so we are kind of, in a way, wrestling with how we make some very tough decisions that impact people commercially and so on, and there are obviously significant tradeoffs. But, in the end, we need, ultimately, the Department of Homeland Security to set general standards on a whole host of issues, not just dealing with communication, and we need that done more quickly than I think it is happening, and I think folks there know it.

I have a standard that says don't ever get the staff mad at you. Maybe that is a rule. But we have a few minutes more, and I would like the professional staff to ask one or two questions.

We will drop dead at 15 after, and I am going to herd folks like cats out of this place, because I have to clear it out in order to make sure we get ready for the committee.

Grace, you have the floor.

Ms. WASHBOURNE. My name is Grace Washbourne. I am a professional staff member at the full committee; I work for Chairman Tom Davis.

Dr. Boyd, I just wanted to ask you one question. I noticed on October 20th SAFECOM or DHS sent out a pre-solicitation notice asking for input from qualified vendors in the academic research community regarding technology concepts and existing under development products or services. Can you tell me a little bit about what you hope to get from that notice and some of your deadlines and the planning, what you are going to do and when you might have a list of equipment that you approve for use across this country?

Dr. BOYD. One of the first things that we want to be able to do is to find out what technologies actually exist; what is it that the developers or vendors claim these technologies can do. And there is no central place you can go to. In fact, as the public safety community will tell you, one of their problems is finding out what is there and what can it do. So as a first part of our effort, we are trying to find out what is it that everybody out there thinks really can address this problem. We get a number of offerings that, once we look at them, we find really don't fit in this arena because they don't fully understand this arena. So part of the RFI is to try to

get that information; what do people think is out there, what does it actually do, and what do we need to look more closely at as possible either present or near term or more advanced solutions or ways to use technology to help with interoperability, to help us solve the problem.

So that is a fundamental part of what we do, because we think there are two things we need to develop before we can make the standards process move properly. One is to understand what there is and what can be done; and the second none is to make sure, and this is where the Statement of Requirements is important, that we understand exactly what interoperability is that the different elements of the community need for what purpose, how much, when, what circumstances, so that we can then define as quickly as we are able serious standards that will begin to address those issues.

Ms. WASHBOURNE. Do you have a timetable set for this? I guess I am sure there is a lot of people out there who want to buy this equipment right now with the SAFECOM approval on it. Do you have in your milestones a deadline?

Dr. BOYD. We have a series of milestones. The first set is the RFI came out about 2 weeks ago, and the closing date, as I recall, is about November 13th or 14th. The Statement of Requirements, we are going to process the draft today. Our goal is to have that completed not later than the end of this calendar year and everybody on board for that. That then becomes part of the standards process and will become the next phase of what our technology development material is, and we hope at that point to be able to go back out publicly. And in fairness I need to tell you this is a goal, this is what we really hope to get; I won't promise we may not have to slip it, because we are working with 44,000 different activities here. Our goal is to try to have the next element of that, looking for specific things that we can actually do some testing and evaluation on around the end of January.

Ms. WASHBOURNE. Thank you, sir.

Mr. SHAYS. Let me conclude my part by saying it is very clear to me the following. The standards need to be set whether or not we can meet the standards, whether or not it is economically feasible, because we need to know what the target is, and then we need to decide whether we can meet it and what are all the restraints in dealing with that. So I just want to emphasize again what are the standards of communication within a community, what are the standards that need to be set among communities, among States, and then say, well, we can meet it if we do the following, and then we say, well, it is just not feasible. We then have to know, well, we are not going to be able to meet the standard in this part of the country or in this area, we simply can't do it for the following reasons. But then we can have kind of an honest dialog. And I think that is kind of how I want to summarize my sense of this hearing.

I am happy to have any of you, in the next minute, make any statement that needs to be on the record. Is there anything, Ms. Evans, that needs to be put on the record before we adjourn?

OK, noting that there is none that has to be, I am sorry we kind of rushed you at the end.

And to our audience, thank you for your cooperation, but we are going to have Members who are going to start to come in the next 5 minutes for a committee meeting, so this hearing will be adjourned, and I ask you graciously to leave.

[Whereupon, at 1:15 p.m., the subcommittees were adjourned, to reconvene at the call of their respective Chairs.]

[The prepared statements of Hon. Carolyn B. Maloney, Hon. Jane Harman, and additional information submitted for the hearing record follows:]

Joint Subcommittee Hearing
"Public Safety Interoperability: Can You Hear Me Now?"
10:00 a.m., Room 2154 Rayburn House Office Building
November 6, 2003

Statement of Congresswoman Carolyn B. Maloney

As Chair of the Democratic Caucus's Task Force on Homeland Security and as a Member who represents New York City, homeland security is an issue I care deeply about.

The safety and security of our homeland is something we can all agree on – it is truly a bipartisan issue. Because we are all advocates of tough homeland security, we should all celebrate our successes and work together to fix vulnerabilities.

One of our greatest vulnerabilities is the lack of interoperability of communication for our nation's first responders.

One of the saddest lessons that we all learned during the terrorist attacks of September 11, 2001, was the importance of all emergency personnel to communicate with each other. On that terrible day, the New York City Police Department had a helicopter in the air around the towers and could see the North Tower glowing red and radioed their officers to warn them of a collapse, allowing most of their officers exit safely. At the same time numerous firefighters who were in the building could not hear the announcement to leave because their radios were not compatible. The lack of this crucial information contributed to the death of hundreds of New York's Bravest.

Another well documented problem was that the radios simply did not work in the Towers because of their height and they lacked the needed repeaters.

The problems of September 11th were not without precedent. In 1993, when the World Trade Center was the site of another terrorist attack, the fire department's radios did not work in the Towers and there was not interoperability between all emergency personnel. Thankfully during that attack, these failures did not result in a loss of life of our emergency personnel. But failure to act on the lessons that were learned clearly led to deadly consequences.

In the two years since September 11th, there has been a lot of discussion regarding interoperability and efforts to have specific Spectrum dedicated for public safety, but despite all of this discussion and Billions of dollars spent on homeland security funding, including some grants for interoperable communications, there is still one simple truth that exists in New York City – the radios that did not work on September 11th 2001 **still** do not work today. Let me repeat, they still do not work and there is no interoperability among public safety personnel.

My sincere hope is that this hearing will shed further light on progress being made to further enhance interoperability of communication for our emergency personnel and to gain further information on what we have to do in New York to get this technology up and working for our first responders to avoid another disaster. We must learn from history. We do not need any more examples as to why investing in this technology is so important.

House Committee on Government Reform
Subcommittees on National Security, Emerging Threats and International Relations
and
Technology, Information Policy, Intergovernmental Relations and the Census
Joint Hearing on First Responder Inter-Operability
Thursday, November 6, 2003

Opening Statement: Congresswoman Jane Harman (CA-36)

Chairmen Shays and Putnam, and Ranking Members Kucinich and Clay: 121 firefighters died needlessly on September 11, 2001 because their colleagues in the NYPD could not warn them in time that the World Trade Center towers were about to collapse.

Since 9/11, I've maintained an almost exclusive focus on two issues: information sharing and inter-operable communications. We've made definite progress improving information sharing over the past two years, but we are nowhere, repeat, nowhere on inter-operability.

As we sit here today, thousands of California firefighters are in the end stages of battling the worst wildfires – in fact the worst natural disaster -- my state has ever experienced. The fires have already taken 22 lives, including one firefighter, destroyed 3,500 homes, and consumed more than 750,000 acres of brush and timber. More than 80,000 citizens had to be evacuated from their homes.

Firefighters from all over California and neighboring Arizona coordinated their actions in real time to fight a menace that rapidly spread, shifted direction and put both citizens' and firefighters' lives in mortal danger.

And yet, Los Angeles County Fire Chief Michael Freeman informs me his firefighters were often unable to coordinate efforts with firefighters from neighboring jurisdictions, not because they didn't have the finest men and women on the job, but because they could not communicate with each other over their radios. "It's the same problems we always have communicating on our radios with other agencies," he said. "Different counties' radios are often on completely different, incompatible frequencies, hindering our efforts to protect lives and property."

LA County firefighters adapted by handing out some of their own radios to other departments but this did not always work. In one instance, in Claremont, Assistant Chief Michael Morgan's firefighters actually had to drive around and track down firefighters from a neighboring county to give them crucial information because they could not communicate with them by radio. This meant that, in some cases, coordination was impossible because they were separated by dangerous areas. This is unacceptable and completely unnecessary. It is a sad day when the talents and skills of brave men and women are undermined by a lack of technology.

Today's witnesses will likely tell us that the key factors for inter-operable communications are coordination, equipment, training, standards and radio spectrum. But it is spectrum that is the

Achilles heel. If Congress can't make good on its promise to provide the necessary spectrum for first responders, the other efforts will be wasted because radios need to be on the same frequency to talk to each other. That is why Rep. Curt Weldon and I introduced the Homeland Emergency Response Operations (HERO) Act earlier this year.

The 1997 Balanced Budget Act required the FCC to re-allocate radio spectrum for public safety, from a band that is scheduled to be vacated no later than December 31, 2006. Unfortunately, the same law postpones transferring that band indefinitely if more than15% of households are unable to receive digital television.

The practical effect of this unfortunate loophole is that firefighters, police and emergency personnel can't even begin planning for next generation inter-operable communication systems because they cannot be sure when the spectrum will be available.

The HERO Act would close this loophole and ensure the availability of the spectrum. This act also lays the foundation for a next generation of voice and data communications systems that can enable first responders to take advantage of the communications revolution that is already sweeping through the private sector and the military.

In Iraq and Afghanistan, US forces capitalized on stunning advances in information technology. The military's integrated, cutting-edge communication systems rapidly coordinated and shared data, undoubtedly saving American lives. Likewise, in the private sector we see a wide variety of innovative products hitting the markets allowing consumers to increasingly receive all the customized voice and data services they want wherever they are.

The dividends of a similar revolution in public safety and homeland security could be directly measured in lives saved. With region-wide voice and data systems, firefighters in California could have had real time tracking maps to show progress of the fires, locations of other firefighters, critical infrastructure, blueprint layouts of chemical plants or oil refineries and in many cases, locations of citizens who needed to be rescued.

The HERO Act is endorsed by the International Association of Fire Chiefs (IAFC), the International Association of Chiefs of Police (IACP), the Association of Public-Safety Communications Officers (APCO), the National League of Cities, the National Volunteer Fire Council, and the International Union of Police Associations, all of whose letters of endorsement I have attached to my opening statement..

By showing leadership now and moving forward with inter-operability legislation like the HERO Act, we can make vital and urgent progress in better protecting our citizens.

Federal Communications Commission
Washington, D.C. 20554

January 9, 2004

VIA HAND-DELIVERY

Chairman Christopher Shays
Subcommittee on National Security,
Emerging Threats, and
International Relations

Chairman Adam Putnam
Subcommittee on Technology,
Information Policy, Intergovernmental
Relations and Census

Committee on Government Reform
2157 Rayburn House Office Building
Washington, D.C. 20515-6143

Dear Chairman Shays and Chairman Putnam:

This letter transmits written responses to the post-hearing questions in connection with the November 6, 2003 appearance before your Subcommittees by the FCC's Wireless Telecommunications Bureau Chief John Muleta and Office of Engineering Chief Ed Thomas.

We were pleased to fully cooperate with your request to provide hearing witnesses and we appreciate this further opportunity to clarify some of the issues raised during the hearing. Please feel free to contact our office if you need any further assistance.

Sincerely,

Martha Johnston
Director, Office of Legislative Affairs
Federal Communications Commission

enclosure

ANSWERS TO QUESTIONS FOR THE RECORD
FROM THE MAJORITY AND MINORITY MEMBERS

1. At our hearing on public safety communications interoperability on November 6, local government representatives testified that among the pressing issues facing public safety was growing incidences of cellular/public safety communications interference and the lack of available spectrum in which to site new interoperable voice and data communications systems. Are there any options before the FCC regarding the public safety interference issue that, aside from remedying this interference problem, would provide additional spectrum for public safety interoperability?

Response: Yes, several options have been advanced in filings with the Commission. For example, the 800 MHz band plan initially advanced by the National Association of Manufacturers and MRFAC (a Commission-certified frequency coordinator) provided public safety with an increment of additional spectrum (0.5 MHz). The band plan contained in the initial Nextel White Paper proposed a band plan that would increase the amount of 800 MHz spectrum for public safety. The Consensus Proposal, which superceded the Nextel White Paper, proposes 2.5 MHz of additional 800 MHz spectrum for public safety (depending on markets).

2. Marilyn Praisner, Councilwoman, Montgomery County, Maryland testified that Anne Arundel County, Maryland, has experienced over 60 cases of cellular/public safety interference over the past several years. She further testified that not all cellular carriers have proactively worked with the County to addresses these safety issues and that it is likely that numerous "dead zones" will exist despite the best efforts of cellular carriers. How does the Commission intend to help resolve these serious issues? Please provide a history of all FCC contact with Anne Arundel County regarding interference in public safety bands.

Response: In recognition of the high priority the Commission places on effective public safety communications, the staff of the Wireless Telecommunications Bureau (Bureau) has taken an active role in facilitating coordination and communication among affected parties and continues to assist them in their efforts to resolve these serious issues in an efficient and effective manner. Although Commission staff may not have recorded all meetings with the County, our records do reflect meetings held in August, September and October of 2002 and January, February, April and July, 2003.

In March, 2001, the County reported 61 "dead spots" in the vicinity of Commercial Mobile Radio Service (CMRS) cell sites. With cooperation from the CMRS licensees, the number of dead spots was reduced to 20 as of July, 2003. The County is improving its communications system by adding base stations and replacing portable units with more modern equipment. County officials forecast that, by November, 2003, the number of dead spots would be reduced to eight and that, within three years, only four dead spots would remain. The Bureau has granted the County a Special Temporary Authorization to "swap" some of its public safety channels with Nextel. The channel-swap was undertaken to provide additional spectral separation between the County's radios and the channels used in CMRS cells. The County believes that the swap will result in a significant reduction of interference. When the County's representatives first met with Commission staff on the interference issue, they reported that some of the CMRS carriers had not been responsive to interference complaints. However, at the urging of Commission staff, we now understand that the carriers have since participated actively with the County in interference abatement efforts, premised primarily on the industry-developed Best Practices Guide.

3. I understand that the U.S., Canada and Mexico have agreements in place regarding how they will divide up the available 800 MHz channels for use in each country near the border areas. We understand that Nextel's plan to realign the 800 MHz band would alter the channel line-ups along the border areas, and that there might need to be corresponding adjustments by Canada and Mexico to their channel allocations. What impact would that realignment have on transborder interoperability among Public Safety agencies, and have Canada and Mexico indicated whether they agree with these changes?

Response: The Nextel proposal is but one of several of the proposed solutions before us for abating interference to 800 MHz public safety systems. To the extent that any of these proposals involve relocating public safety channels within the 800 MHz band, the current five 800 MHz public safety mutual aid (interoperability) cross-border channels could be affected. Canada has registered concern about the specific Consensus Parties band plan. To address this concern, and all issues of spectrum use along the borders, the Commission will use its periodic consultative sessions with Mexican and Canadian government communications officials to ensure that any band plan adopted is consistent with the public safety communication interests of all countries concerned.

4. What research and development activities does the FCC undertake to overcome interoperability, standardize and test systems? How do you share this information with other Federal offices? How is this information shared with states, localities and first responders?

Response: We note, as an initial matter, that the Commission does not undertake research and development (R&D) directly related to interoperability. To the extent that the Commission has had an R&D focus in the public safety arena, it has been on the interference characteristics associated with the public safety communications environment.

We further note that the Departments of Justice and Homeland Security both have programs that fund R&D for public safety communications interoperability. We have actively monitored these programs and, where appropriate, have actively been involved therein. For example, the Commission facilitated the development of public safety interoperability standards in the 700 MHz public safety band through the Public Safety National Coordinating Committee (NCC). This group recommended, and the Commission adopted, narrowband standards for all radios that operate on the 700 MHz band interoperability channels. The NCC also made a recommendation for a wideband data standard which is pending Commission consideration. The NCC worked with the Telecommunications Industries Association (TIA) to develop these interoperability technical standards and TIA performed the related research and background work.

In addition, we have been exploring the potential of additional technological solutions to interoperability in certain proceedings. For instance, in 2001 the Commission adopted rule changes to accommodate the authorization and deployment of a new generation of radio equipment known as software defined radios (SDRs). In addition, the Commission has initiated a Cognitive Radio Technologies proceeding to examine the enhanced interoperability potential that these even more flexible technologies may offer.

We continue to believe that effective coordination and communication regarding public safety issues are key determinants of sound public policy in this context. Given the importance of public safety interoperability and the wide variety of scenarios in which such issues can arise, the Commission maintains its web site for the purpose of sharing information with both Federal and

non-Federal first responders. The Commission's staff also meets regularly with representatives of states, localities and first responders.

5. Management and coordination of public safety spectrum is a complex issue. One of the barriers identified by state and local officials is limited and fragmented radio spectrum. Public safety spectrum – and interoperable channels – is also scattered across multiple frequency bands – with the FCC controlling public safety spectrum for state and local public safety agencies, and the National Telecommunications and Information Administration (NTIA) controlling Federal spectrum used for public safety purposes. The National Governors' Guide to Emergency Management noted that extensive coordination will be required between the FCC and the NTIA to provide adequate spectrum and to enhance shared local, state, and Federal communications. Please describe FCC's actions to provide adequate spectrum for public safety purposes, and in particular, how has the FCC acted to provide interoperable channels.

Response: To date, the Commission has allocated more than 97 MHz of spectrum for public safety communications. This includes the recent allocation of 24 MHz in the 700 MHz band. It also includes 50 MHz of spectrum at 4940-4990 MHz that was recently designated for use in support of public safety. This band will be used for broadband, advanced technology applications.

The Commission also seeks to provide more spectrum for public safety purposes by investigating and considering ways to ensure more efficient use of existing spectrum. In a recent order, mandatory transition dates were established for migrating to more efficient technology in the VHF band, thus reducing channel size from 25 kHz to 12.5 kHz operations. The result would be a considerable increase in the amount of spectrum available for public safety purposes. The Commission also encourages public safety agencies to take advantage of commercial communications. Today, commercial services are used for non-mission critical communications thus reducing the congestion on systems used for mission critical communications.

In order to promote interoperability, the Commission encourages sharing and has rules for two types of sharing. First, the FCC's rules specifically provide for shared use of radio stations where licensees may share their facilities on a nonprofit, cost shared basis with other public safety organizations as end users. In July 2000, the Commission expanded this sharing provision. Now this rule also allows Federal government entities to share these facilities as end users. A second type of sharing is unique to the 700 MHz public safety spectrum. Here, state and local public safety licensees may construct and operate joint facilities with the Federal government. The Commission took this action to encourage partnering of FCC-licensed state or local government entities with Federal entities to promote interoperability and spectrum efficiency. The Commission staff continues to look for ways to encourage public/private partnerships such as in the 4.9 GHz band.

Specific designations for interoperability have also been made. In 1998, the Commission designated about 10 percent (2.6 MHz) of spectrum in the 700 MHz band for public safety interoperable communications. Since 1987, five mutual aid channels in the 800 MHz band have been available for interoperable communications. Also, in October 2002, the Commission designated additional interoperability channels in the VHF and UHF public safety bands. These channels will be available on a primary basis January 1, 2005. The Commission continues to evaluate interoperability needs and stands ready to increase this amount as warranted.

In January 2003, the Commission and NTIA executed a new Memorandum of Understanding (MOU) that will apply to coordination of spectrum issues involving both Federal

and non-Federal users. Specifically, this MOU establishes a framework for compliance with statutory requirements. This partnership will mean more efficient regulatory processes that will speed the deployment of new innovative spectrum-based services to consumers.

6. What is the FCC relationship to the SAFECOM project in DHS? Please list all meetings and contact the FCC has had with SAFECOM over the last few months. What process or agenda does the FCC have to work with SAFECOM on public safety interoperability? How will the FCC share its substantial work on public safety regional planning and allocation and interference challenges with SAFECOM? What kind of relationship does the FCC seek with SAFECOM?

Response: Prior to SAFECOM, Commission staff actively engaged in efforts by Public Safety Wireless Network (PSWN) and other Federal initiatives aimed at promoting interoperable communications. Commission staff has been following SAFECOM developments and the FCC relationship to the SAFECOM project is developing, as is more fully detailed below. Because the FCC and SAFECOM share the common goal of improving public safety communications interoperability, we are in the process of establishing a strong working relationship. We believe that this is critical to our common interests of promoting homeland security and public safety communications initiatives. In sum, we will continue to work cooperatively with SAFECOM.

The Commission shares its substantial work on public safety regional planning and other public safety matters with SAFECOM and the public through information posted on the FCC web site. Our experience shows that use of the Internet is a particularly effective, efficient and important tool for information sharing with the public safety community, which is a large and diverse user group.

While all of our meetings and contacts are not recorded or documented, the following is a list of the significant meetings. On September 29, October 14, and December 9, 2003, FCC staff met with staff from SAFECOM for information exchanges and briefings. FCC staff attended the Summit on Interoperable Communications for Public Safety hosted jointly by SAFECOM and NIST, June 26-27. FCC staff attended the first meeting of the Federal Coordination Council, October 28. FCC staff attended a November 21, meeting of the Federal Law Enforcement Wireless Users Group (FLEWUG, now undergoing a name change), a group under the SAFECOM umbrella of Federal groups. There have been a number of meetings related to the Administration's interoperable communications program in which SAFECOM presented briefings, *e.g.* July 24, October 14, and October 16, 2003. A specific focus of the most recent meeting between the FCC's Wireless Telecommunications Bureau and SAFECOM representatives on December 9 was to initiate staff-level discussions for strengthening established coordination. In particular, there was discussion of a more formal relationship with the SAFECOM Executive Committee in order to effectively communicate and coordinate public safety interoperability initiatives within the Commission's purview.

7. The FCC recently ruled that no new equipment capable of transmitting on 25 kHz channels can be manufactured after about 2005. Will this help or hurt SAFECOM efforts to achieve interoperability nationally?

Response: The FCC believes that the answer to providing additional public safety communications capability lies, in part, on "narrowbanding" existing public safety spectrum. To that end, both Federal and non-Federal public safety agencies are moving to 12.5 kHz channels in place of the current 25 kHz channels. The transition to narrower bandwidths requires close coordination to maintain compatibility among systems; including use of "backward compatible" technologies and scheduling changes to coincide with the service life of existing equipment, in

order to avoid the unaffordable cost of an immediate, wholesale conversion to new systems. We believe that coordination between Federal and non-Federal agencies in a phased-in transition to narrowband technology will preserve and enhance interoperable public safety communications and, at the same time, provide the additional communications capacity necessary to meet homeland security needs. We note that the Federal government's narrowbanding initiative calls for conversion of Federal systems to 12.5 kHz operation by January, 2005. The Commission adopted a different timetable and mechanism for narrowbanding. While the deadline for public safety systems to migrate to 12.5 kHz technology is January 2018, there were other transition benchmarks established such as a prohibition on license applications for new operations using 25 kHz technology. Recently, however, the Commission stayed the narrowbanding rules pending disposition of petitions for reconsideration regarding the implementation of the conversion to narrowbanding. Although we cannot pre-judge the outcome of the proceeding, in considering these petitions, the Commission will be mindful of the Federal narrowbanding schedule, and will examine what impact, if any, changes to its narrowbanding approach will have on interoperability between Federal and non-Federal agencies.

8. Establishing "true" interoperability requires more than technical and spectrum compatibility. For example, differences in terminology and operating procedures can lead to communications problems even where the participating public safety agencies share common communications equipment and spectrum. The FCC established the National Coordination Committee (NCC) to help draft FCC guidance for the 700 MHz band. The NCC, in its reports to the FCC, noted the need for the FCC to establish common nomenclature for interoperability channels and to require manufactures to include that nomenclature in their products. Other operational issues noted by public safety officials include the need for a common language among first responders from different jurisdictions, and the need for a common incident management system to ensure adequate command and control of responses to incidents by multiple jurisdictions.

Response: As discussed in greater detail in the response to Question No. 9, below, we agree with the NCC that equipment compatibility is a necessary but insufficient condition for assuring communications interoperability among public safety personnel. The NCC's recommendations on technical and operational standards to promote interoperability in the 700 MHz band have been helpful to the Commission.

9. Do you agree that the lack of common nomenclature for channel designations, lack of common operating procedures, and lack of a common incident management system are problems in establishing "true" interoperability?

Response: Yes, we agree that these factors can affect interoperability. The Commission previously has declined to adopt rules governing public safety procedural matters such as common nomenclature and channel labels. Such matters are better addressed by experts in incident scene management working in concert with organizations that represent public safety interests and with Project SAFECOM. Voluntary compliance with standards established by such organizations appears adequate to ensure "true interoperability." The Commission continues to be supportive of such voluntary efforts and desires to provide public safety licensees the requisite flexibility to address day-to-day operational and procedural matters.

> What actions does the FCC intend to take in order to establish common operations language, common operating procedures and a common incident management system for key Federal, state, and local public safety agencies?

Response: As noted above, Project SAFECOM is addressing interoperability issues, and we anticipate working with SAFECOM to explore ways in which the Commission can assist in the development of interoperability procedures. In that connection, we note that the Department of Homeland Security is charged with developing and administering a National Incident Management System to provide a consistent nationwide approach to prepare for, respond to and recover from domestic incidents.

What role do FCC regulations assign or permit states to play in addressing public safety wireless interoperable communications?

Response: We believe that the states are best qualified to address interoperability issues that have local importance. For example, when the Commission designated 2.6 MHz of spectrum in the 700 MHz band for interoperability communications, state emergency communications agencies were assigned responsibility for administration of the interoperability channels. The FCC's rules provide that the states may manage interoperability channels in two ways: (1) they may establish a State Interoperability Executive Committee (SIEC) or its equivalent; or (2) they may designate their Commission-established Regional Planning Committees to manage the interoperability spectrum. Under either approach, our rules require an interoperability plan to be developed.

10. Can you tell us about the status of Regional Planning in the 700 MHz band? Have you met the deadlines you first set out to meet? If not, what have been the challenges with this regional outreach program?

Response: There are fifty-five Regional Planning Committees (RPCs) and each committee is required to submit a plan for how it will manage and use the general use spectrum. Each regional plan must contain certain elements described in our rules, and must be coordinated with adjacent regions. A list of 700 MHz RPCs and region activities are available at http://www.wireless.fcc.gov/publicsafety/700MHz. To date, 45 regions have held initial meetings, while 10 regions have held no meetings. Two regions, Region 5, Southern California, and Region 24, Missouri, filed their 700 Plans in late summer and early fall of this year. Commission staff have been working closely with Regional Chairs on critical common elements not included in their plans. Both regions are expected to submit revised plans in the near future and these will be placed on public notice for comment. We expect the plans to be approved quickly after the comment cycle is completed if there are no significant public interest issues raised.

Although only two regional plans have been filed with the FCC, we nonetheless believe significant planning is underway in various regions. In this connection, we note that RPCs have available for their use the guidelines developed by the Commission's Federal Advisory Committee, the Public Safety National Coordinating Committee (NCC). A copy of the 700 MHz Regional Planning Guidebook is available at the National Public Safety Telecommunications Council (NPSTC) website http://www.npstc.org/documents.html. In addition, NPSTC provides regional planning support. This includes training, a database for regional planning, and funding by the National Institute of Justice AGILE Program, in the form of a $2500 grant to each region.

11. In the FCC's Spectrum Policy Taskforce Report, the Task Force "did not recommend fundamental regulatory changes in the near term with respect to spectrum that is currently

dedicated for public safety use." Given what we heard at the November 6 hearings, why do you believe the Task Force came to that non-recommendation?

Response: In June 2002, Chairman Powell created the FCC's Spectrum Policy Task Force to conduct a comprehensive review of spectrum policy. Following a series of public fora, and a public comment period, in November 2002, the Task Force issued a staff-level report outlining a series of recommendations for spectrum policy reform intended to maximize the potential public benefits derived from spectrum-based services through increased regulatory flexibility and market-oriented policies.

With respect to most spectrum under its jurisdiction, the Task Force report recommended that the Commission move away from the traditional "command-and-control" spectrum regulation model, whereby the government allocates and assigns frequencies to limited categories of spectrum users for specific, government-defined uses. Instead, the report recommended that the Commission expand the use of "exclusive use" and "commons" models of regulation. Under the former, a licensee obtains exclusive, transferable, and flexible rights for the use of spectrum in a defined geographic area. Under the latter, unlimited numbers of unlicensed users share frequencies, with no expectation of protection from interference so long as the minimal requirements for unlicensed devices are met.

The Task Force recognized, however, that there are important differences between the spectrum needs of commercial systems and those of public safety systems, with respect to capacity, reliability, and funding. In view of these differences, the Task Force recommended that spectrum currently set aside for public safety use on a command and control basis should remain regulated under that model. In other words, in view of the critical need to ensure continued access by public safety users to adequate spectrum to meet their core needs, the Task Force recommended no change to the status quo in the near term.

In addition, the Task Force encouraged the longer-term exploration of market-oriented policies that might benefit, rather than burden, public safety spectrum users. For example, the Task Force recommended that public safety users be given the flexibility to lease spectrum capacity that is available during lower use periods to commercial users subject to a "take-back" mechanism when public safety use increases. The Task Force further recommended that during major emergencies, additional public safety spectrum needs be addressed through enhanced easement rights to non-public safety spectrum.

12. The FCC Spectrum Task Force Report also recommends that public safety users should have flexibility to lease their dedicated spectrum capacity during lower-use periods to commercial users with a mechanism to take it back when its use is needed. Has this recommendation been vetted through public safety first responders? It also recommends that for major regional or national emergencies, additional public safety spectrum needs should be addressed through enhanced easement rights to non-public safety spectrum. Has this recommendation been vetted through commercial and private spectrum licensees? How does the FCC propose to regulate these recommendations and when?

Response: The Spectrum Task Force Report was prepared by FCC staff, and its recommendations – including those relating to public safety spectrum use – have been submitted to the full Commission for consideration. Any action that the Commission may take based on these recommendations must be based on further rulemaking, during which public safety entities will have the opportunity to comment and their views will be carefully considered. With respect to the issue of public safety leasing, the Commission has recently sought comment in a Further

NPRM in the *Secondary Markets* proceeding on whether to allow public safety licensees to lease their spectrum. A number of public safety entities have filed comments in this proceeding, which remains pending. In addition, at its December Agenda meeting, the Commission adopted a NPRM on so-called "cognitive radios," devices that can sense and adapt to their radio environment to use spectrum more efficiently. As part of that NPRM, the Commission sought comment on the potential for cognitive radio technology to facilitate "interruptible" spectrum leasing by public safety entities, i.e., leasing of spectrum with the technical capability to take it back instantaneously when needed for public safety use. The Commission encourages public safety to comment in this proceeding as well. With respect to public safety use of commercial spectrum, some commercial wireless carriers already provide "priority access" on their systems to public safety entities on a voluntary basis. The Commission has not yet made any determination about whether to initiate further rulemakings in this area based on the Task Force recommendations.

13. In the FCC's Spectrum Task Force Report issued in November 2002, one recommended objective was to define and set standards of interference. Why is it so hard to come to agreement on the definition of interference? When does the FCC hope to quantify acceptable levels of interference? How will the FCC provide regulations concerning inference definition and provide for better enforcement?

Response: The Spectrum Policy Task Force Report noted that interference definition and control are extremely complex matters involving technical and economic tradeoffs. The Report made several recommendations regarding ways to better define interference and improve interference control, and a significant number of comments were received from the public on those recommendations. The Commission has initiated several proceedings in which it will consider how best to implement the Report's recommendations, most notably a Notice of Inquiry on receiver standards and a Notice of Inquiry and NPRM on "interference temperature."

14. What services does the FCC provide to mitigate/stop interference? What is the FCC process of response once an incident is reported? Are there FCC regulations governing time of response and/or correction? How many reported instances of interference have you had in the 700 and 800 MHz bands annually for the last 3 years? Do you believe that interference could technically be solved through enhanced mitigation efforts and new technical rules and procedures? If so, when do you believe these rules and procedures might make it through the FCC process?

Response: The Commission's Enforcement Bureau operates 25 field offices and also operates a Communications and Crisis Management Center, staffed 24 hours a day, 7 days a week to handle emergency communications matters. The Commission's staff responds to all interference complaints, giving precedence to those that involve safety of life and property. Although there currently are no rules governing interference complaint response time, such rules have been recommended in the comments of public safety agencies in the 800 MHz Public Safety Interference proceeding and are currently under consideration.

To date, we have received no complaints of interference in the 700 MHz band. In the 800 MHz band, on the other hand, it was because of an apparent increase in the number of reports of interference, that in April 2000, the Commission called a meeting of public safety, CMRS and communications industry representatives to discuss means of interference abatement. Participants in that meeting subsequently developed a Best Practices Guide outlining technical solutions to interference problems. Interference reports from public safety agencies are most frequently directed to the CMRS carriers thought to cause the interference and, on occasion, to

the Association of Public Safety Communications Officials, International. This short-term approach for responding to interference reports is working. It serves as an example of a successful public/private sector partnership, although parties agreed from the beginning that is was not a long-term solution.

Interference arises out of an often complex interaction between multiple signals from different licensees operating in the same area. The experience to date regarding interference resolution has been premised on voluntary actions by carriers and public safety entities taken pursuant to the Best Practices Guide. While this approach has been helpful in addressing discrete instances of interference, a number of public safety licensees contend that such efforts are inherently reactive, labor intensive and time-consuming. Accordingly, they claim that current voluntary practices pose the risk that mission-critical communications could fail before the source of the interference can be identified and corrected -- a process that can require several weeks in many cases. And because of the dynamic interference environment created by the multiple sources of potential interference, an interference problem, once identified and mitigated, can crop up again in a matter of days. One of the issues under consideration in the 800 MHz Public Safety Interference proceeding is an evaluation of how to modify, improve upon and/or enhance the voluntary mitigation efforts described in the Best Practices Guide. The Commission is actively considering the alternative approaches presented in this very complex proceeding and considers its resolution to be a high priority.

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

March 3, 2004

The Honorable Christopher Shays
Committee on Government Reform
Subcommittee on National Security, Emerging Threats,
and International Relations
U.S. House of Representatives
Washington, DC 20510

Dear Mr. Chairman:

This letter is in response to the Subcommittees' November 17th request for additional information stemming from a public safety interoperability hearing held on November 6th, 2003.

I appreciate the opportunity to have testified at the hearing as well as provide additional information regarding the Administration's actions in this critical area. I look forward to continuing to work with you and your staffs to successfully address the challenges toward achieving interoperability among the first responder community.

The attachment to this letter provides responses to the Subcommittees' questions. Please contact me at 202-395-1181 with any additional questions.

Sincerely,

Karen S. Evans
Administrator, IT and E-Gov

Attachment

Identical Letter sent to the Honorable Adam Putnam

Responses to the Questions for the Record for Karen Evans, OMB Administrator for IT and E-Gov

1. (A). What objectives and roles were set for SAFECOM within the E-Gov initiative?

The Administration's E-Government Strategies of 2002 and 2003 established the objectives and role for SAFECOM. SAFECOM's role and objectives were further refined and reiterated through the FY 2005 budget process. As part of the FY 2005 budget process, OMB conducted a comprehensive review of all of the President's E-Government initiatives. The goal of the review was to ensure the scopes, activities, and funding requests of the initiatives matched the original intent as detailed in the 2002 and 2003 E-Government strategies.

The E-Government Strategies state the role of SAFECOM is to partner with Federal agencies, state, local, and tribal public safety organizations to achieve interoperable wireless solutions to better enable communication and information sharing across all levels of government as public safety officials respond to emergencies. SAFECOM, therefore, is the umbrella coordinating program for Federal interoperability efforts and is working to ensure all Federal programs encourage planning for and implementation of systems and agreements at all levels of government to leverage existing capabilities and focus interim procurement and fielding actions to enhance interoperable communications.

To fully meet this role, SAFECOM's specific objectives are to:

(1) Develop standards – working in partnership with Federal, state, local, and tribal public safety organizations to define the requirements for first responder interoperability at all levels;

(2) Develop a national architecture – in coordination with the work under the National Response Plan, SAFECOM will develop a national architecture to assist in the progression towards wireless interoperability;

(3) Coordinate the Federal government's wireless interoperability investments and programs – SAFECOM will develop a process to assist agencies in sharing their planned wireless program activities and investments with SAFECOM. All agencies were notified as part of the FY 2005 budget process to coordinate and align their wireless activities with SAFECOM. This includes grant programs (which also conform to the common grant guidance) and any programs conducting demonstration projects, technical assistance, outreach or research and development with the public safety community in the area of wireless communications; and

(4) Develop a website – The Federal government's single point of access for wireless interoperability information, including standards.

(B). Why did it take so long to get SAFECOM under way?

SAFECOM was identified as one of twenty-four Presidential E-Gov initiatives in September 2001. Since that time, the initiative has had a number of different project managers and faced some initial challenges in working with the first responder community. However, these challenges have now been addressed. The Department of Homeland Security is the managing partner for this initiative and SAFECOM is housed within the Department's Science and Technology Directorate. Additionally, SAFECOM institutionalized a governance structure with Federal, state, and local public safety organizations.

(C). Does DHS/SAFECOM have the overall lead responsibility for coordinating federal efforts to assist state and local governments address barriers to interoperability? Does DHS have sufficient authority to exercise this responsibility?

Yes, SAFECOM is the Federal government's umbrella program for coordinating Federal wireless interoperability efforts. Please note that many Federal agencies have responsibility for assisting state and local governments on interoperability issues. For example, within the Department of Homeland Security, the Office of Domestic Preparedness (ODP) has a key role in providing grants in this area. SAFECOM does not take over those responsibilities but rather SAFECOM compliments ODP's efforts and will improve coordination with ODP and other offices and agencies to ensure that the Federal government is maximizing our own resources and programs to better serve the public safety community.

All Federal agencies are expected to coordinate and align their wireless activities with SAFECOM and comply with the common wireless requirements developed by SAFECOM.

(D). How will OMB support SAFECOM?

OMB supports SAFECOM through both budget and management processes. For example, through the budget process OMB has reiterated SAFECOM's role to coordinate and align Federal wireless interoperability efforts. Additionally, on a quarterly basis under the President's Management Agenda via the E-Government Scorecard, OMB assesses both the managing partner and partner agencies support of the initiative. On a monthly basis, OMB reviews the initiatives progress against their key milestones.

(E). Why didn't the AGILE program transfer to DHS? And why shouldn't it go to DHS? What special needs does the law enforcement community have that they have to have their own federal interoperability office?

AGILE is a program within the Office of Science and Technology (OST) of the National Institute of Justice. Since the Homeland Security Act did not transfer OST to DHS, the AGILE program remained in OST. Because it was essential that we not lose any time in initiating critical efforts, SAFECOM has been working with AGILE to leverage research and development already underway in OST to better address all public safety needs, from fire to medical to law enforcement.

Where appropriate, we will certainly review opportunities to consolidate Federal programs in this area. For example, the Public Safety Wireless Network (PSWN) was consolidated under SAFECOM. Additionally, through the efforts of the Federal Enterprise Architecture, OMB is working with agencies to promote coordination within business lines.

2. (A). What performance outcome measures should be established for managing interoperability efforts to demonstrate whether the desired interoperability outcome is being achieved?

Regarding the measurement of successful interoperability projects in the field, SAFECOM is developing a baseline to define the existing state of interoperability. There does not currently exist a baseline for interoperability and developing a relevant one will require participation from public safety organizations at all levels of government.

Additionally, SAFECOM began development of a Balanced Scorecard to include Federal, state, and local input to its measurement process. This balanced scorecard effort has been based on dozens of interviews with relevant stakeholders and has recently been reviewed by the SAFECOM Executive Committee.

(B). Is there a strategic plan for addressing interoperability at the federal, state, and local levels? If so, what are the milestones?

As mentioned earlier, OMB conducted a comprehensive review of all of the President's E-Government initiatives as part of the FY 2005 budget process. The goal of the review was to ensure the scopes, activities, and funding requests of the initiatives matched the original intent as detailed in the Administration's 2002 and 2003 E-Government strategies.

As a result of this review, a number of the E-Gov initiatives were refocused because the scope and some of the activities had shifted or expanded from the original intent. This was the case with SAFECOM. As a result, SAFECOM is currently revising their strategic plan to ensure that it fully aligns with the commitments and objectives made in the E-Government Strategies. A copy of the revised plan will be provided to the Committees when completed.

(C). What are the long-term objectives and goals? What specific plans exist or are being developed to achieve these objectives and goals?

The long-term objectives and goals are to:

> (1) Develop standards – working in partnership with Federal, state, local, and tribal public safety organizations to define the requirements for first responder interoperability at all levels;

(2) Develop a national architecture – in coordination with the work under the National Response Plan, SAFECOM will develop a national architecture to assist in the progression towards wireless interoperability; and

(3) Coordinate the Federal government's wireless interoperability investments and programs – SAFECOM will develop a process to assist agencies in sharing their planned wireless program activities and investments with SAFECOM. All agencies were notified as part of the FY 2005 budget process to coordinate and align their wireless activities with SAFECOM. This includes grant programs (which also conform to the common grant guidance) and any programs conducting demonstration projects, technical assistance, outreach or research and development with the public safety community in the area of wireless communications.

The revised strategic plan will provide more detail on these objectives and will be sent to the Committees when completed.

(D). What annual performance goals exist or are being developed to gauge progress towards accomplishing strategic interoperability goals?

This information will be provided as part of the strategic plan.

3. (A). Is there a national infrastructure today? If so, please describe what constitutes a national infrastructure. Do you plan to replace existing systems with a new national infrastructure?

There is a national infrastructure, but it is not interoperable. It is as though each city or county had its own road network, but one that normally did not link to adjacent jurisdictions (you can expand this analogy to include fire on a different road network in the same jurisdiction). Therefore, the national infrastructure is dysfunctional.

Over 90 % of the public wireless safety infrastructure is owned at the local and State levels and most of that infrastructure operates on a 20 to 30 year life cycle. That equipment is also used on the local and State levels every day to respond to incidents. Given that the vast majority of infrastructure is owned and used at the local and State level, what is needed is an approach in which new technologies are compatible with existing systems and infrastructure. Through the use of standard interfaces, systems can begin to "connect" first locally, then regionally, and eventually nationally.

The fundamental purpose of SAFECOM is not to replace existing systems nor build a national infrastructure but rather identify the appropriate standards for products and services and develop a national architecture to significantly improve interoperability.

(B). What are the specific milestones for implementing a national infrastructure?

The specific milestones for implementing a national infrastructure include identification of interoperability standards across all levels of government and the development of a national architecture.

(C). How will such an effort be funded?

Funding for identification of requirements leading to standards and architecture development will come from the partner agencies' contributions to SAFECOM. In FY 2004,

(D). What is the federal government doing to ensure it coordinates its national infrastructure with state and local systems?

The Federal government is partnering with state and local organizations through SAFECOM activities. Additionally, we are taking steps to coordinate and align Federal investments in wireless interoperability through SAFECOM to reinforce that partnership as well as agreed to requirements and standards as we reach those agreements.

(E). If no national infrastructure is planned, what is the long-term vision of the federal government to address the interoperability problem?

SAFECOM will work as a full partner with local and State first responder agencies to help them achieve interoperability with each other, and to help the Federal government achieve interoperability with them. Fully 90% of the nation's wireless infrastructure is owned by local and State agencies. While the Federal government has much to offer—extensive technical assistance, Federal funding where appropriate, and robust research and development programs and projects—any Federal initiative must first be a partnership with the representative leaders of the local and State public safety community.

4. Which federal department do you believe is ultimately responsible for ensuring that public safety first responders get: (1) adequate amount of usable spectrum; (2) affordable and interoperable equipment; and (3) a clearinghouse of tested equipment?

(1) FCC; (2) Every Federal agency with investments in this area is responsible for ensuring that their equipment interoperates with public safety officials. By creating a national architecture and standards SAFECOM will assist in decreasing costs for interoperable equipment; and (3) SAFECOM has been working with their partners on the development of a clearinghouse.

5. What has OMB done to help SAFECOM promote better management of public safety spectrum issues in federal departments? Do we have the money available to do this effectively? Have all federal departments and office involved in public safety interoperability dedicated funds to the management and long-term planning these efforts need? Who has taken the lead and who else needs to step up to the plate?

In his announcement of the creation of the Spectrum Policy Initiative the President stated that his Administration was "committed to promoting the development and implementation of a U.S. spectrum policy for the 21st century that will: (a) foster economic growth; (b) ensure our national and homeland security; (c) maintain U.S. global leadership in communications technology development and services; and (d) satisfy other vital U.S. needs in areas such as public safety, scientific research, Federal transportation infrastructure, and law enforcement." The goal of this Initiative is to improve elements of the spectrum management process and thereby greatly enhance the governments' ability to efficiently manage spectrum.

The activities of this Initiative are to develop recommendations for improving spectrum management policies and procedures for the Federal government and to address State, local, and private spectrum use. The Secretary of Commerce is the chair of the Initiative. The Initiative consists of an interagency task force and will also hold a series of public meetings.

Additionally, the Initiative is charged with conducting a comprehensive review of spectrum management policies (including any relevant recommendations and findings of the study conducted pursuant to section 214 of the E-Government Act of 2002) with the objective of identifying recommendations for revising policies and procedures to promote more efficient and beneficial use of spectrum without harmful interference to critical incumbent users. OMB is a member of this Task Force.

The work of this Initiative will better inform responses to the above questions. However, it is also important to note that the issue of spectrum has been raised as part of the current draft of the Statement of Requirements for Public Safety Wireless Communication and Interoperability that SAFECOM has been working on with their partners. While the primary purpose of this draft Statement of Requirements is to detail the functional requirements of a fully interoperable public safety communication network, spectrum has been discussed in relation to the need for an adequate amount of spectrum to meet the functional needs detailed in the requirements.

6. (A). Who in the federal government is responsible for creating and facilitating communication interoperability standards for federal-federal interoperability? Federal to state interoperability? State to local interoperability? Regional interoperability?

SAFECOM is partnering with NIST on the identification of interoperability standards. For example, the Project 25 Suite of Standards (P25): With input from the user community, these standards have been developed to allow for backward compatibility with existing digital and analog systems and to provide for interoperability in future systems. The FCC has chosen the P25 suite of standards for voice and low-moderate speed data interoperability in the new nationwide 700 MHz frequency band and the Integrated Wireless Network (IWN) of the U.S. Justice and Treasury Departments has chosen the Project 25 suite of standards for their new radio equipment. P25 has also been endorsed by the US Department of Defense for new LMR (Land Mobile Radio) radio systems.

Additionally, SAFECOM is partnering with a joint DHS/DOJ/Treasury effort; the Integrated Wireless Network to develop Fed to Fed interoperability standards.

(B). Many federal, state, local personnel, associations, and private companies are interested in addressing public safety communications problems. What is the federal process to insure all these groups have input into the final solutions? Which federal entity is the ultimate decision maker on interoperability standards?

SAFECOM is the Federal government's central point for receiving input from all stakeholders. Agreement on interoperability standards will be made through SAFECOM.

7. If you had to guess, how long will it take for the United States to achieve interoperability and provide the safe and adequate response major incident or day-to-day emergency preparedness our citizens deserve?

There are several milestones on the road to interoperability. The first is to achieve near-term, local emergency interoperability, which can happen fairly quickly with patch solutions over the next couple of years.

The second is day-to-day operational interoperability. This vision requires police, fire, EMS, etc. to be able to communicate within a given locality. That goal will take longer to achieve than emergency interoperability. Applying this across the entire nation would require a sustained five to ten-year effort.

The vision of comprehensive interoperability for large-scale emergencies, will take longer. This approach involves making it possible for any agency called into an emergency in area to be able to interoperate. This goal, given the life cycle of local and State infrastructure, could take 20 years or more to achieve.

8. Is it the role of the federal government to set standards on communications grants to states and localities? Is first responder equipment being bought today with federal grant money subject to any communications standards? If not, how can we be assured that this equipment will be interoperable?

Yes, the Federal government does have a role to coordinate Federal grants so that they support interoperability standards. The various grant programs that exist at the Federal level have historically been uncoordinated. We must increase the degree of coordination and cooperation among these grant programs available to the public safety community to make sure that we use the funding to deliver the best possible results in the shortest amount of time.

In conjunction with representatives from the public safety community, SAFECOM has developed common grant guidance that can be used by all grant programs related to public safety communications. Last year, this guidance was incorporated by grant programs at both COPS and FEMA and Federal agencies with grant programs that

address public safety communications were expected to adopt the common grant guidance.

9. What conditions or requirements should be placed on grants as a condition for receiving funds to ensure that local interoperability projects fit into the overall state and/or national effort to increase interoperability?

The conditions or requirements that will need to be placed on grants will be for all recipients to use the interoperability standards once developed.

10. (A). Is the Task Force looking at the creation of a national strategy and the creation of a White House-level Council to help guide some of the nation's long term spectrum strategy, including the needs of our first responders and their role in homeland security?

The Task Force was created to focus on improving spectrum management policies and procedures to stimulate more efficient and beneficial use of Government spectrum. The functions of the Task Force are advisory and include, but are not limited to, producing a detailed set of recommendations for improving spectrum management policies and procedures to stimulate more efficient and beneficial use of spectrum by the Federal government.

(B). We also understand that one of the topics of the Task Force is moving state and local government to management under the National Telecommunications and Information Administration where federal entities are managed is an effort to give them more of a group voice. Does OMB have an opinion on this?

I expect that management of state and local government spectrum use will remain at the FCC, and the Administration is quite comfortable with maintaining this allocation of responsibility. However, I expect the Task Force will provide recommendations that lead to improved planning processes and coordination across NTIA, the FCC, other Federal agencies, private-sector users, and state and local governments.

Questions for the Record Submitted by Dr. David Boyd, SAFECOM
To Committee on Government Reform Subcommittees

Q. *What objectives and roles were set for SAFECOM within the E-Gov initiative?*

SAFECOM was established to serve as the umbrella program within the Federal government to help local, tribal, state and federal public safety agencies improve public safety response through more effective and efficient interoperable wireless communications. As a public safety practitioner driven program, SAFECOM is working with existing federal communications initiatives and key public safety stakeholders to address the need to develop better technologies and processes for the cross-jurisdictional and cross-disciplinary coordination of existing systems and future networks.

Q. *Why did it take so long to get SAFECOM under way?*

By leveraging the knowledge and expertise of the public safety community, and by integrating other programs addressing this same issue, SAFECOM has already saved time and money in identifying the key issues, needs, and existing efforts related to public safety communications. The efforts of the Federal Emergency Management Agency (FEMA), in recognizing the key leaders for this issue in the public safety community, engaging them in a strategic dialogue, and beginning the basis for a SAFECOM governance structure, have provided an essential foundation for the program. It became clear, however, that to address many of the issues associated with interoperability, a technical capability would be necessary to deal with issues such as spectrum, standards, and the development and incorporation of emerging communications technologies. As the Department of Homeland Security (DHS) stood up, the Science and Technology Directorate (S&T) became the obvious home for SAFECOM. At S&T, SAFECOM is building on FEMA's foundation work and developing strategies to address immediate public safety communication needs while creating a long-term migration strategy that will produce more spectrally efficient systems.

Current Program Management at S&T began in April, 2003 (with the official program transfer in June, 2003) and quickly identified the program's existing shortfalls and steps to improve both the program and its capability to improve public safety communications and interoperability. SAFECOM:

- Identified the need to institutionalize a governance structure inclusive of local and state public safety organizations. This structure has provided public safety organizations with both a voice and an incentive to participate in SAFECOM.
- Identified the need to create a baseline and comprehensive statement of requirements for public safety communications. As a result, SAFECOM began the development of the first comprehensive "Statement of Requirements" (SoR) in coordination with the National Institute for Science and Technology (NIST), the Advanced Generation of Interoperability for Law Enforcement (AGILE) in

the Office of Science and Technology in the Justice Department, and the National Public Safety Telecommunications Council (NPSTC).

Q. *Does DHS/SAFECOM have the overall lead responsibility for coordinating federal efforts to assist state and local governments address barriers to interoperability? Does DHS have sufficient authority to exercise this responsibility?*

While there is no special legislative authority assigning this responsibility to DHS, the Office of Management and Budget (OMB) has made clear that SAFECOM has the overall lead responsibility for coordinating all federal public safety communications and interoperability efforts. Within DHS, the 2004 Appropriations bill requires grant-making agencies to include the SAFECOM guidance in grant solicitations and awards.

Q. *Why didn't the AGILE program transfer to DHS? And why shouldn't it go to DHS? What special needs does the law enforcement community have that they have to have their own federal interoperability office?*

AGILE is a program within the Office of Science and Technology (OST) of the National Institute of Justice. The legislative act creating the Office of Science and Technology in DHS did not transfer the AGILE program remained to DHS. SAFECOM does not have the legislative authority for such a transfer, so AGILE remained in OST. So that SAFECOM would not lose any time in initiating critical efforts, the SAFECOM PMO immediately initiated efforts to create a partnership with OST so AGILE projects could be leveraged to the advantage of the public safety community. These AGILE efforts will continue to play an integral role in SAFECOM's more comprehensive research and development program that will address all public safety needs, from fire to medical to law enforcement.

Q. *What is SAFECOM doing to ensure that it coordinates with the key federal stakeholders, e.g., Justice, and avoids duplication of effort?*

SAFECOM began its coordination role by sponsoring a Summit in partnership with NIST in June 2003. The purpose of this Summit was to identify all of the federal and national level programs working on public safety communications issues. Sixty programs were identified.

As a result of the Summit, SAFECOM sponsored the creation of the Federal Interagency Coordination Council (FICC), which is a representative body of federal programs working on public safety communications. Members include FEMA, the Office of Community Oriented Policing Service (COPS), Department of Agriculture (USDA), US Fire Administration (USFA), Office of Domestic Preparedness (ODP), the offices of the Integrated Wireless Network (IWN), National Telecommunication and Information Administration (NTIA), Federal Communications Commission (FCC), and others. The FICC has already begun meeting and will coordinate efforts and limit unnecessary

duplication by federal agencies through the establishment of working groups targeting technical assistance, federal grants and funding, and standards development.

SAFECOM's successes in FY03 at coordinating efforts and decreasing unnecessary duplication of effort are illustrated in the successful coordination of the COPS and FEMA Interoperable Communications Equipment grant process. SAFECOM provided coordinated grant guidance for both agencies, coordinated a joint peer review process, and began development of tools, such as a grants clearinghouse, that will help other agencies and departments deconflict their grant processes and increase intra- and interagency coordination.

Q. *What performance outcome measures should be established for managing interoperability efforts to demonstrate whether the desired interoperability outcome is being achieved?*

SAFECOM is developing a baseline to define the existing state of jurisdictional interoperability in order to relate progress to a starting point. Public safety has never had a baseline for interoperability and developing a relevant one will require participation from public safety at all levels, particularly at the local and state levels. Development of this baseline is essential to the SAFECOM program, because without it, it no meaningful outcome measures can be developed.

SAFECOM also began development of a Balanced Performance Scorecard to include local, state, and federal input to its measurement process. This balanced scorecard effort is based on dozens of interviews with relevant stakeholders and has recently been reviewed by the SAFECOM Executive Committee. SAFECOM expects to complete the scorecard this coming year with annual revisions as needed.

Q. *Is there a strategic plan for addressing interoperability at the federal, state, and local levels? If so, what are the milestones?*
The Strategic Plan is aligned around four key focus areas:

- **Development of a technical foundation**. SAFECOM is working to develop the standards and define the requirements for interoperability that will guide 1) industry as it develops solutions and 2) localities and states as they purchase them. SAFECOM will also spur innovation by funding demonstration projects of new technologies and solutions. The Statement of Requirements will be completed in the first half of 2004; technical standards will be developed over the coming two to four years.
- **Coordination of funding assistance**. SAFECOM is helping the Federal government tie grant and direct funding for public safety communications to grant guidance. This guidance includes consensus standards and requirements to ensure that localities and states are purchasing interoperable solutions. The first iteration of this guidance was included in several major grant programs for the first time in 2003, and will be provided to every identified federal program in 2004.

- **Provision of technical assistance**. Many localities and states will need technical assistance to achieve the goal of interoperability. SAFECOM is developing and promoting best practices, developing handbooks and publications, and providing technical support in the implementation of communications systems for local and state agencies. A significant part of this material has already been developed more will be developed and distributed in 2004. Materials will be developed and distributed throughout the life of the program.
- **Provision of policy recommendations**. Spectrum policy is an essential issue in the public safety communications arena. As a result, SAFECOM is playing a key role in representing the views of local and state stakeholders on spectrum issues within the Federal government by informing the FCC and other federal agencies on the impact of their policies on local and state public safety agencies. These activities will continue throughout the life of the program.

Current milestones used in the SAFECOM Program/Project Plan emphasize short-term initiatives in each of these areas. These short-term milestones, however, are currently being refined based on a joint SAFECOM/AGILE strategic planning meeting held in the beginning of December 2003 involving key stakeholders from the local, state, and federal levels, where mid- and long-term milestones were also identified. Information about these initiatives can be provided as soon as they are integrated into the SAFECOM Program Plan.

Q. *What are the long-term objectives and goals? What specific plans exist or are being developed to achieve these objectives and goals?*

The lack of public safety interoperability is clearly a long-standing, complex, and costly problem with many impediments to overcome. While several government programs have made great strides in addressing this issue, much of this work has been disconnected, fragmented, and often conflicting. In an effort to coordinate the various federal initiatives, SAFECOM was established by OMB and approved by the President's Management Council (PMC) as a high priority electronic government (E-Gov) initiative. The mission of SAFECOM is to enable public safety nationwide (across local, tribal, state, and federal organizations) to improve public safety response through more effective and efficient interoperable communications. SAFECOM recognizes that before interoperability can occur, reliable, mission-critical, agency-specific communications capable of meeting day-to-day operational needs are required. SAFECOM, accordingly, is addressing the intricately related issues of reliable day-to-day public safety communications as well as the more specialized issues related to communications interoperability.

Unlike many other E-Gov initiatives, the solution to the problems of public safety communications and communications interoperability is not a single, nor even a particular set, of discrete tasks. There are no simple solutions. Instead, the identification and orchestration of many existing programs is required.

For SAFECOM to accomplish its mission, a systematic approach will be employed, and will include the following components:

- Identification of the problem, recognizing that it is a problem with many complex elements and no single solution.
- Collaboration with the leadership of the public safety community, especially at the local and state level, to gather comprehensive communications requirements in order to develop appropriate work packages. This is essential, since 90% of the public safety infrastructure is owned by local and/or state public safety entities.
- Identification of current initiatives throughout the federal government that address interoperable communications issues, and the development of a coordination strategy to leverage existing work while decreasing unnecessary duplication of efforts.
- Implementation of a strategy to develop short- and long-term projects addressing public safety communications and communications interoperability requirements.

To achieve these goals SAFECOM works in the following seven areas:

- **Federal Funding Coordination**. SAFECOM itself has no grant funds. Instead SAFECOM's role is to coordinate the funding of agencies with public safety communications related funding informed by SAFECOM's research and development and testing and evaluation (RDT&E) program.

- **Technical Assistance.** SAFECOM's role in technical assistance is to provide expertise and assistance to jurisdictions across the country. In addition, SAFECOM will coordinate the technical assistance provided by other federal agencies for public safety communications related grantees. It is critical that SAFECOM serve as a repository for public safety communications related technical expertise and provide assistance to jurisdictions that have not received grants.

- **Research and Development** SAFECOM is a key resource within the Federal government to fund and provide direction for basic research into the new technologies necessary to advance interoperability. Without a coordinated federal effort, industry will be the only source for direction on new technologies. This result will reinforce the current state of building multiple technology silos that cannot communicate.

- **Testing and Evaluation**. SAFECOM is the only source within the Federal government for testing and evaluation of public safety communications related technologies. Without a program like SAFECOM, the technologies developed in the R&D process cannot move from research to implementation.

- **Demonstration Projects**. SAFECOM will fund limited demonstration projects to prove the value of technologies coming out of the RDT&E process. Without a proof of concept in a real world environment, public safety will be reluctant to adopt new technologies that can move the nation towards interoperability.

- **Standards**. As the public safety community learns from the RDT&E, federal funding coordination, and technical assistance processes, these insights will need to be institutionalized in standards.

- **Policy**. SAFECOM plays a key role as the voice of public safety within the Federal government. In this capacity, SAFECOM participates on the White House Spectrum Policy Initiative and provides policy recommendations on topics related to public safety communications interoperability. SAFECOM has also begun discussions with the Federal Communications Commission to develop efficient mechanisms to share information and concerns.

Q. *What annual performance goals exist or are being developed to gauge progress towards accomplishing strategic interoperability goals?*

The Balanced Score Card will be used as the measurement process along with the interoperability baseline. Given the scope of the public safety interoperability issue, a quick effort to establish arbitrary measures is unlikely to succeed. For example, interoperability may mean something very different in a rural county than it does in a major city. A quick measurement tool that doesn't examine these types of nuances would grossly underestimate the depth of communications problems. It is essential that SAFECOM take a longer-term view by developing measures that begin at the local level and build up to the federal level through a participatory process. These measures, along with the interoperability baseline, will make it possible to gauge our progress in a meaningful way.

3. *Does the public safety community and senior leaders at all levels of government have the needed up-to-date information on the state of interoperability in their jurisdictions in order to develop approaches for improving and implementing interoperable wireless communications networks? If not, why?*

In general, the public safety community and senior leaders at all levels of government do not have the information needed. There are some jurisdictions that have recognized public safety communications as an ongoing priority and have had the resources available to do something about it. These jurisdictions, however, are exceptions.

There is no national interoperability picture and most local and state jurisdictions do not have one of their own. The only way for these jurisdictions to get information on issues of technology, standards, spectrum, or policy trends -- since they generally do not have engineers or scientists on staff -- is through vendors, who are not always a reliable source of information. To provide honest-broker information, SAFECOM is providing both an outreach program and a technical assistance capability (in some cases, leveraging the

work of others such as ODP and the National Law Enforcement and Corrections Technology Center system). Neither of these programs is currently equal to the task, but SAFECOM has initiated several projects to strengthen both.

Q. *Is there a national infrastructure today? If so, please describe what constitutes a national infrastructure. Do you plan to replace existing systems with a new national infrastructure*?

There is a national infrastructure, but the majority of it is not interoperable. It is as if each city or county had its own road network, but one that normally did not link to adjacent jurisdictions or even to other disciplines within jurisdictions. In many jurisdictions it is as if the fire department, police department and emergency management service each built their own networks of roads to reach incidents, and compounded the problem by making each set of roads incapable of accommodating the other discipline's vehicles. That makes for a national infrastructure, but a dysfunctional one.

This problem does not have a simple solution. Over 90 % of the public safety infrastructure is owned at the local and state levels and most of that infrastructure operates on a twenty to thirty year life cycle, even though the equipment is designed to support only a ten year life cycle. At the same time, the need for interoperability starts at the local level where it is required nearly every day to coordinate ordinary emergency responses such as high speed pursuits across jurisdictions. As a consequence, jurisdictions are most anxious to meet local interoperability needs first, even though they recognize a clear need for the more infrequent but potentially more critical regional interoperability. Only rarely do they see a need for interoperability with federal agencies, although federal agencies frequently need interoperability with state and local agencies. As a consequence, any interoperability solution has to begin with the state and local levels who own and operated the vast majority of the wireless public safety infrastructure. What is required is a "system of systems" approach in which new technologies are made backwards compatible with existing systems and infrastructure. Through the use of standard interfaces, systems can begin to "connect" first locally, then regionally, and eventually nationally so that a radio in Florida can be used (for example, by an emergency response team) in support of a wildfire suppression effort in California or a terrorist attack in New York.

What is neither necessary nor feasible is a total build out of a new national network that requires locals and states to "join on."

Q. *What are the specific milestones for implementing a national infrastructure?*

Since no national infrastructure will be completely built out, what is needed is a migration at all levels of government to more advanced technologies that are backwards compatible, where necessary, with legacy systems and equipment. Moreover, requirements for multi-jurisdictional and multi-disciplinary planning for development or enhancement of all new systems is required and should be integrated in all

interoperability programs. SAFECOM guidance is designed to held federal programs assist local and state jurisdictions in developing such plans.

Q. *If no national infrastructure is planned, what is the long-term vision of the federal government to address the interoperability problem?*

The Federal government has an important role in helping agencies at all levels achieve interoperability goals. SAFECOM believes this task is best accomplished when the Federal government works as a full partner with local and state first responder agencies to help them achieve interoperability with each other, and to help the federal government achieve interoperability with them, without dictating solutions that may not meet local and state needs.

This approach is essential since 90% of the nation's wireless infrastructure is owned by local and state agencies. While the federal government has much to offer—extensive technical assistance, federal funding where appropriate, and robust research and development programs and projects—any federal initiative must first be a partnership with the leaders of the local, tribal and state public safety communities.

Q. *What are the major tactical and long-term milestones associated with SAFECOM's efforts?*

SAFECOM is not so much replacing the infrastructure (although modernization will inevitably require some of that) as it is implementing interoperability within an existing infrastructure, both on a near-term emergency basis (e.g., switching units and other interim solutions), and on a long term basis by developing standards, best practices and other policies needed to provide a foundation for a workable migration strategy.

5. *Some federal and private groups have stated that the amount of spectrum currently available to public safety agencies is insufficient to effectively carry out their critical missions. What can SAFECOM do to see that more spectrum is made available?*

SAFECOM understands that spectrum is a finite resource and that there is inevitable competition to meet conflicting, important needs. Nevertheless, SAFECOM will reflect the local and state position as far as possible, help to educate the FCC on that position, identify spectrum suitable for transfer or sharing, and help introduce better technologies and practices that can help improve spectrum management and reduce loading.

6. *What relationship does SAFECOM seek with the FCC? Can you explain your interaction to date?*

SAFECOM's contacts with the FCC so far have included a briefing with Jeanne Kowalski of the Wireless Telecommunications Bureau and inclusion of the FCC on the Federal Interagency Coordination Council, and a meeting with Sheryl Wilkerson, Legal Advisor to Chairman Powell.

More recently, SAFECOM has begun working with John Muleta, Chief of the Wireless Telecommunications Bureau, to a develop a more formal and effective process for ensuring that the FCC is able to fully consider local and state needs. In essence, SAFECOM intends to be seen as a trusted voice to the FCC that represents, within the Federal government, the needs of public safety.

7.

Q. *Please describe the barriers to public safety wireless interoperability that you have identified and describe the actions you are taking to address these barriers.*

SAFECOM is working to address the four major barriers identified in the National Task Force on Interoperability (NTFI) report:

- **Limited and fragmented planning and cooperation**. For example, fire departments do not often coordinate with their local police departments when acquiring new equipment, and police departments seldom coordinate with fire departments. Coordination across jurisdictional lines is even more uncommon.
- **Incompatible and aging communications equipment**. Many jurisdictions operate their equipment on a 20 to 30 year life cycle, well beyond recommended 10 year life cycles. As a result, equipment is outdated for much of its operational life.
- **Limited equipment standards**. Only Phase I of P25 is complete and it does not address all the necessary issues. There are no other equipment interoperability standards available.
- **Limited and fragmented funding**. Governments and agencies are often on different budget cycles and funding at the local, state, and federal levels for communications and interoperability is limited.

SAFECOM's core program packages were developed to address these barriers and include:

- **Development of a technical foundation**. SAFECOM is working to develop the standards and define the requirements for interoperability that will guide industry as they develop solutions and localities and states as they purchase them. SAFECOM will also spur innovation by funding demonstration projects of new technologies and solutions.
- **Coordination of funding assistance**. SAFECOM is helping the Federal government tie grant funding and direct funding for public safety communications to grant guidance. This guidance includes standards and requirements to ensure that localities and States are purchasing interoperable solutions.
- **Provision of technical assistance**. Many localities and States need technical assistance to plan for and implement interoperability solutions. SAFECOM is developing and promoting best practices, providing handbooks and publications, and providing technical support in the implementation of communications systems for local and state agencies.

- **Provision of policy recommendations**. Spectrum policy is an essential issue in the public safety communications arena. As a result, SAFECOM plays a key role in representing the views of local and state stakeholders on Spectrum issues within the Federal government by informing the Federal Communications Commission and other federal agencies on the impact of their policies on local and state public safety agencies.

Q. *What resources does SAFECOM provide state and local governments to address the barriers to interoperability that you identified above?*

SAFECOM is not a grant-making program, and hence does not provide grants to local and state governments to address communications barriers. However, SAFECOM does provide assistance in other forms, including funding for demonstration projects to promote testing and acceptance of advanced technologies; coordinated grant guidance across federal grant making programs; support of standards processes and identification of new needs for standards; resources that help agencies through the planning process (i.e., guides, online support tools); outreach to educate decision makers on the issues and solutions in public safety communications; and coordinated technical assistance and onsite engineering support.

Q. *Has SAFECOM conducted a needs analysis to determine how it can best assist state and local governments achieve interoperability? If so, what were the results? If not, is one planned?*

The nation cannot wait for the completion of extensive studies of interoperability in the United States. The need is too urgent, so SAFECOM is building on needs assessments already developed, in part by the National Public Safety Telecommunications Council (NSTSC), the Public Safety Wireless Advisory Committee (PSWAC), the National Coordination Committee (NCC), NTFI, and AGILE. At the policy level, SAFECOM has brought together the leaders of local and state public safety and government associations to help the program identify its near, medium, and long term ways of assisting in the enhancement of communications and interoperability. Such participation is integral to SAFECOM, and has been institutionalized through the SAFECOM governance structure. The current effort to baseline interoperability will inform this process in a more formal way.

8.

Q. *Who is responsible for executing and regulating its recommended standards? Who had input into these standards? Is it a legally binding standard?*

There is no existing universal authority for any agency to regulate interoperability standards, although some standards related to interoperability are regulated by the FCC (the 700 MHZ national calling channels are one example). SAFECOM has established a strong partnership with NIST to support the completion of critically needed standards.

With input from the user community, the P25 standards have been developed to allow for backward compatibility with existing digital and analog systems and to provide for interoperability in future systems. The FCC has chosen the P25 suite of standards for voice and low-moderate speed data interoperability in the new nationwide 700 MHz frequency band and the IWN of the U.S. Justice and Treasury Departments has chosen the Project 25 suite of standards for their new radio equipment. P25 has also been endorsed by the US Department of Defense for new LMR (Land Mobile Radio) radio systems. P25, however, does not address all the interoperability needs in the field, especially for newer or emerging technologies, such as internet protocol (IP) based solutions or software defined radio.

Q. *Who is responsible for testing equipment to see it meets these standards?*

No single agency is responsible for testing equipment against interoperability standards. SAFECOM, however, is working to create a coordinated testing and evaluation effort. The program currently supports a testing initiative in the Institute for Telecommunications Sciences (ITS) within the Department of Commerce and works with NIST in their current effort to test P25 radios and communications patches. Unfortunately, this testing is very costly, so SAFECOM has to be judicious in selecting what to test through ITS. SAFECOM plans to develop a testing system much like that used to test body armor for law enforcement that will institutionalize the process and permit industry to cover part of the testing costs.

Q. *Could you describe what was accomplished in Project 25, Phase I? Please describe Phase II and the MESA project. What work is planned for phase II and the MESA project? When will these standards be completed?*

Project 25 standards are a good start and currently represent the only standards available to public safety for communications interoperability. P25, however, is not a panacea. Elements of P25 are still proprietary and the standards are not universally applicable. While some vendors have suggested that P25 standards are currently required for federal grant funding, this statement is not entirely true. SAFECOM only recommends their adoption where appropriate. SAFECOM coordinated grant guidance also puts a major emphasis on applicants' plans for multi-jurisdictional and multi-disciplinary interoperability. In addition, P25 equipment can be prohibitively expensive for some smaller jurisdictions. SAFECOM staff believe that further standards will be required to meet the needs of public safety for interoperable communications.

Q. *Are additional standards needed? Why or why not?*

Public safety requires additional standards dealing specifically with interoperability. SAFECOM views the standards process as an opportunity for industry to work together with public safety to leverage existing standards where possible and to create new ones only where needed. SAFECOM is ensuring coordination with the federal government, public safety organizations, and existing standards defining organizations, and where possible will provide incentives for industry to participate.

Q. *Is it true that Project 25 is only binding on the federal spectrum community?*

While P25 standards are binding at the federal level in certain cases, SAFECOM does not believe that P25 could be universally binding given the issues discussed above. SAFECOM does not have the authority to mandate standards to local and state public safety. Some jurisdictions will need to take other approaches, but SAFECOM will continue to lead public safety toward interoperable solutions.

Q. *Would it help for states and localities to compel use of these standards?*

SAFECOM does not mandate standards for local and state public safety and does not have the authority to do so. In its FY 2003 grant guidance, SAFECOM encouraged all new systems to be compatible with P25 standards, but also recognized that individual jurisdictions should have the ability to create their own interoperability plans and include P25 as they see fit. It is helpful, however, when federal grant programs include SAFECOM guidance and when localities and states require that interoperability be included in every new initiative.

9.

Q. *Has SAFECOM coordinated with other federal agencies that request preparedness plans to ensure that requirements for emergency communications plans are included?*

COPS and FEMA issued $147 million for communications equipment, but the governing legislation permitted very little of that funding to be used for planning. In general, there is little funding available specifically for communications planning. The SAFECOM coordinated grant guidance used by both FEMA and COPS required proof of multi-jurisdictional and multi-disciplinary interoperability planning. SAFECOM is currently working with ODP to enhance the communications elements of their state strategy process.

10. *What conditions or requirements should be placed on grants as a condition for receiving funds to ensure that local interoperability projects fit into the overall state and/or national effort to increase interoperability?*

SAFECOM has no legislative authority to mandate any additional conditions beyond those given to the grant-making agency. However, SAFECOM is coordinating the voluntary integration of common grant guidance across grant making programs for public safety communications. In FY 03 this coordinated guidance was issued with the joint FEMA/COPS grant solicitation. SAFECOM is working to integrate this grant guidance across additional programs in FY 04.

11. *What are you currently doing to share information with other agencies on best standards, protocols and equipment?*

SAFECOM has sponsored and provides support for a Federal Interagency Coordination Council that provides a forum for sharing information across all federal agencies involved in interoperable communications. In addition, SAFECOM is developing tools, including a database/clearinghouse for communications grant related information, for use across the federal government and by local, tribal, and state agencies. These tools include an Internet portal, which will consolidate information about best practices, protocols, and equipment.

12. *What is SAFECOM currently doing to help first responders address systems security?*

The security of systems from harmful attacks is a critical priority. Accordingly, SAFECOM is developing two projects to assist first responders in protecting their systems from compromise. First is an initiative to conduct testing and evaluation of new equipment and fund research and development into new technologies to ensure the integrity of public safety communications equipment. The second is to develop and provide technical information to public safety agencies to help them design and implement effective security measures.

13. *What is being done to consolidate some of the federal effort into interoperability?*

SAFECOM has no legislative authority to force coordination of federal interoperability efforts. However, SAFECOM is actively working to encourage voluntary coordination. Through its governance structure, SAFECOM has provided local, state, and federal public safety a voice within the Federal government. For example, SAFECOM has sponsore the creation of a Federal Interagency Coordination Council to coordinate grant funding, technical assistance and technology/standards development across all relevant federal agencies; coordinated with NIST on a summit identifying all the federal agencies and programs effecting interoperability; and integrated coordinated grant guidance into the joint FY 03 COPS/FEMA solicitation.

14. *What in your individual experiences are the greatest roadblocks to achieving public safety interoperability? If you had to guess, how long will it take for the United States to achieve interoperability and provide the safe and adequate response major incident or day-to-day emergency preparedness our citizens deserve?*

> Beyond the barriers discussed earlier, the greatest challenge is human. It includes helping all the players at all the levels understand the need for interoperability and the potential value of effective interoperability. More importantly, it requires giving all the players a voice in the national process and credible incentives to participate. The SAFECOM national strategy rests on the principle that every level of government involved in interoperability should have a real voice in SAFECOM planning.

Now that SAFECOM's credibility is being established with all levels of government, there are three major milestones on the road to interoperability.

- The first is to achieve near-term, local emergency interoperability, which can happen fairly quickly over the next couple of years by relying on interim technologies that are available now in the marketplace but not widely implemented.
- The second is day-to-day operational interoperability, in which police, fire, EMS, and others are able to communicate within a given locality. This goal will take longer to achieve than emergency interoperability, and applying this across the entire nation will require a sustained and well-funded 5 to 10 year effort.
- The vision of comprehensive interoperability for large-scale emergencies will take much longer. This approach involves making it possible for any agency called into an emergency in any area (e.g., the FEMA coordinated urban search and rescue teams) to be able to interoperate as soon as they arrive with their own organic equipment. This goal, given the current life cycle of local and state infrastructure, could take 20 years or more to achieve.

15. *Why are standards so important to interoperability? Our federal bureaucracy can be very slow in setting communications standards. Can you suggest any way to speed up or improve this process? It can be argued that setting standards for communications equipment curtails the development and investment into new, perhaps more efficient technologies . . . that picking one type of equipment over another is detrimental to the long term solution of interoperability. Do you have an opinion on this?*

Currently the Federal government does not set general communications standards. Instead, federal support is provided to standards defining organizations, such as the Telecommunications Industry Association (TIA). SAFECOM believes the only successful standards process is one that involves both industry and public safety working together in a good faith effort to develop standards that will meet the nation's needs without crippling innovation. Such a process requires a federal coordinating body such as SAFECOM that has the trust of public safety and the ability to offer proper incentives for industry to participate in standards setting initiatives. The process is further strengthened when a recognized and accepted process is used. For that reason, SAFECOM is working through NIST to develop the needed standards.

16. *Are there interim solutions for converting legacy systems into systems that are interoperable? Can you tell us about them?*

There are several interim solutions that can upgrade the capabilities of legacy equipment, and many of these will have to be adopted and implemented to achieve the short-term goal of local emergency interoperability. These interim technologies must be backward compatible and may also include communication "patches" that provide connection among or between disparate systems. However, none of these backward compatibility solutions, either alone or in combination, can provide true, long-term interoperability. To reach that goal, new technologies and systems must be developed through a robust R&D program implemented through a sustained effort over many years.